



05/13/2005

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Set	Items	Description
S1	19675758	DEVICE? OR CONTRIVANCE? OR INVENTION? OR APPARAT? OR APP?? ? OR IMPLEMENT? OR INSTRUMENT? OR TOOL? OR UTENSIL? OR EQUIP?
S2	137904	PROJECTIL? OR MISSILE? OR WARHEAD?
S3	100185	WEAPON?
S4	12485	S2 AND S3
S5	4147917	TOXI?
S6	6721	(S5 OR CHEMIC? OR BIOL? OR HAZARD? OR POISON? OR NOXIOUS? - OR TOXOID? OR MEPHIT? OR VIRU? OR VIRAL? OR ERADICA?) (3N) S3 OR BIO(W)WEAPON? OR BIOWEAPON? OR CHEMICALWEAPON?
S7	447	S6 AND S2
S8	2811570	RECOVER? OR RECLAMAT? OR RECLAIM? OR RETRIEV? OR SALVAG? OR REPROCESS? OR RE(W) (COVER? OR CLAMAT? OR CLAIM? OR PROCESS?) OR EXTRICAT? OR TRANFER? OR RELOCAT? OR EJECT? OR RECOUP? OR - REPOSSESS?
S9	110792	DECONTAM? OR DEMILITAR? OR DECOMMISS?
S10	1710084	CASING? OR HOUSING? OR JACKET? OR SHELL?
S11	3797	BURSTER?
S12	1850	OGIVE?
S13	16875012	BASE? ? OR SUPPORT? OR FOUNDATION?
S14	0	S2 AND S10 AND S11 AND S12 AND S13
S15	506	S2 AND S12
S16	0	S15 AND S11
S17	70	S15 AND S10
S18	30	S17 AND S13
S19	0	S18 AND BURST?

S20 534693 (S5 OR CHEMIC? OR BIOL? OR HAZARD? OR POISON? OR NOXIOUS? -  
OR TOXOID? OR MEPHIT? OR VIRU? OR VIRAL? OR ERADICA?) (3N) (MAT?  
? OR MATTER? OR AGENT? OR SUBSTAN?)

S21 20025 S20 AND S8  
S22 4766 S20 AND S9  
S23 24454 S21 OR S22  
S24 4980 S1 AND S23  
S25 4980 S23 AND S24  
S26 0 S25 AND S18  
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S29 3 S28 AND S5  
S30 10599 S2 AND S10  
S31 40 S2 AND S11  
S32 0 S31 AND S12  
S33 0 S11 AND S12  
S34 0 S23 AND S31  
S35 4406344 S1 AND S13  
S36 182840 RAM OR RAMS  
S37 883525 SEAL OR SEALS OR SEALING OR ORING? OR O(W)RING? OR GASKET?  
S38 1488739 SPRAY? OR NOZZL? OR JET OR JETS  
S39 1489054 S35 AND S36 AND S37 OR S38  
S40 7305 S39 AND S20  
S41 658 S39 AND S23  
S42 3 S41 AND S2  
S43 1 ARCTIC? AND S42  
S44 2 S42 NOT S43  
S45 9 S31 AND (S5 OR S6 OR S20)  
S46 0 S31 AND S23  
S47 0 S18 AND (S5 OR S6 OR S20)  
S48 49 S18 OR S28 OR S42 OR S44 AND S45  
S49 48 S48 NOT S43  
S50 44 RD S49 (unique items)  
S51 1556501 COMPUTAT?  
S52 7 S50 AND S51  
S53 37 S50 NOT S52  
? t s53/7,de/1-12

53/7,DE/1 (Item 1 from file: 6)  
DIALOG(R)File 6:NTIS  
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2273265 NTIS Accession Number: PB2003-107479/XAB  
Chemical Weapons: Sustained Leadership, Along with Key Strategic  
Management \*\*\*Tools\*\*\*, Is Needed to Guide DOD's Destruction Program  
(Report to the Congress)  
General Accounting Office, Washington, DC.  
Corp. Source Codes: 010682000  
Report No.: GAO-03-1031  
Sep 2003 48p  
Languages: English  
Journal Announcement: USGRDR0324  
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fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285  
Port Royal Road, Springfield, VA, 22161, USA.  
NTIS Prices: PC A04/MF A01  
Country of Publication: United States  
Congress expressed concerns about the Chemical \*\*\*Demilitarization\*\*\*

Program cost and schedule, and its management structure. In 2001, the program underwent a major reorganization. Following a decade long trend of missed schedule milestones, in September 2001, the Department of Defense (DOD) revised the schedule, which extended planned milestones and increased program cost estimates beyond the 1998 estimate of \$15 billion to \$24 billion. GAO was asked to (1) examine the effect that recent organization changes have had on program performance and (2) assess the progress DOD and the Army have made in meeting the revised 2001 cost and schedule and Chemical Weapons Convention (CWC) deadlines. GAO recommends that DOD develop an overall strategy for the Chemical \*\*\*Demilitarization\*\*\* Program that would articulate the programs mission, identify the long-term goals and objectives, delineate the roles and responsibilities of all DOD and Army offices, and establish near-term performance measures. Also, DOD should \*\*\*implement\*\*\* a risk management approach that anticipates and influences internal and external factors that could adversely impact program performance. DOD concurred with GAOs recommendations and said it is taking steps to \*\*\*implement\*\*\* them.

Descriptors: \*\*\*\*Demilitarization\*\*\*; \*Chemical \*\*\*warheads\*\*\*; \*Program evaluation; \*\*\*Chemical\*\*\* \*\*\*agents\*\*\*; Destruction; US DOD; Policy analysis

53/7,DE/2 (Item 2 from file: 6)  
DIALOG(R)File 6:NTIS  
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2154401 NTIS Accession Number: ADA372162/XAB

Design and Analysis of a Fuze-Configurable Range Correction Device for an Artillery \*\*\*Projectile\*\*\*

(Final rept)

Hollis, M. S. ; Brandon, F. J.  
Army Research Lab., Aberdeen Proving Ground, MD.  
Corp. Source Codes: 105322000; 425747  
Report No.: ARL-TR-2074  
Dec 1999 71p

Languages: English

Journal Announcement: USGRDR0009

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NTIS Prices: PC A05/MF A01

Country of Publication: United States

The primary purpose of the low cost competent munitions (LCCM) program was to improve the effectiveness of indirect fire \*\*\*support\*\*\* from cannon artillery (D'Amico 1996). With the advances in microelectronics, sensor technology, and packaging design, the reality of a range correction device for artillery is conceivable. One of the main objectives of the range correction device concept was to contain all the mechanical and electrical components within a fuze-like envelope, while maintaining certain constraints that would allow the fuze to fit into a variety of artillery \*\*\*shells\*\*\* used by North Atlantic Treaty Organization (NATO) countries. Another objective of the range correction device concept was to avoid any changes within the \*\*\*ogive\*\*\* of any of the \*\*\*projectiles\*\*\* in the existing stockpile. This report is a culmination of many design iterations, numerical analyses, shock tests, and actual cannon launchings. Most of the design iterations and numerical analyses are not mentioned in this report simply because they were stepping stones that led to the final design. Structural analyses indicated that the overall prototype design was durable

enough to withstand the most severe artillery cannon launching available today. The design should be capable of withstanding a 15,000 g inertial set-back load with 150,000 rad/s<sup>2</sup> of angular acceleration. In addition, the design should be capable of deploying while the \*\*\*projectile\*\*\* has velocity of 650 m/s and is spinning at 250 cycles per second. The next step would be to fabricate and test the design in order to truly verify the integrity of the structure and to determine the overall effect of the deployed drag blades on the range of flight.

Descriptors: \*\*\*\*Projectiles\*\*\*; \*Artillery ammunition; Nato; Deployment; Detectors; Low costs; Structural analysis; Numerical analysis; Prototypes; Blades; Microelectronics; Launching; Packaging; Guns; Drag; Fire \*\*\*support\*\*\*; Shock tests; Artillery; Electrical equipment; Stockpiles; Corrections; Mechanical components

53/7,DE/3 (Item 3 from file: 6)  
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1980186 NTIS Accession Number: AD-A312 917/8

Data Supporting the Screening Risk Assessment for the Anniston Army Depot Chemical \*\*\*Demilitarization\*\*\* Facility

(Final rept)

Legg, W. E.

Logistics Management Inst., McLean, VA.

Corp. Source Codes: 109522000; 428723

Report No.: LMI-CE417RD1

Aug 95 38p

Languages: English

Journal Announcement: GRAI9702

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NTIS Prices: PC A04/MF A01

Country of Publication: United States

Contract No.: DACW31-94-D-0092

The Anniston Army Depot (ANAD) is a U.S. Army Armament, Munitions, and Chemical Command (AMCCOM) facility located in Calhoun County in northeastern Alabama; it is three miles east of the city of Anniston, Alabama. The depot encompasses 18,000 acres of land, most of which (80 percent) is wood-lands, lakes, and streams. Approximately 10 percent of the facility supports active operations such as rebuilding and maintaining tanks and other heavy \*\*\*equipment\*\*\*, performing \*\*\*missile\*\*\* maintenance, repairing and rebuilding small arms and artillery, and supplying other materiel and services to the U.S. Army. The remaining 10 percent of the property is used for storing and servicing ammunition and lethal unitary \*\*\*chemical\*\*\* warfare \*\*\*agents\*\*\*. The depot has been in operation since 1941 and has been storing lethal unitary \*\*\*chemical\*\*\* \*\*\*agents\*\*\* since 1963. The depot is one of eight sites that stores lethal unitary agents in the United States. In 1986, the Department of Defense Authorization Act was promulgated. It directed the destruction of the \*\*\*chemical\*\*\* \*\*\*agent\*\*\* munitions stockpiles by 30 September 1994. This act was amended in 1988 to allow for operational testing of a commercial-scale incineration project. The date for complete destruction of the stockpiles was extended to September 1997. On the basis of the results of an environmental impact statement, the \*\*\*chemical\*\*\* \*\*\*agent\*\*\* disposal method that appeared to provide the highest degree of safety and protection of human health and the environment was the on-site,

high-temperature incineration method.

Descriptors: \*Army facilities; \*Supply depots; \*\*\*\*Demilitarization\*\*\*; \*  
\*\*\*Chemical warfare agents\*\*\*; \*\*\*\*Letha\*\*\*l \*\*\*agents\*\*\*; Test and  
evaluation; Maintenance; Weapons; Guided \*\*\*missiles\*\*\*; Department of  
defense; United states; Commerce; Risk; High temperature; Facilities;  
Destruction; Operational effectiveness; Environmental impact; Combustion;  
Safety; Small arms; Supports; Chemical ordnance; Disposal; Alabama; Lakes;  
Artillery; Stockpiles; Urban areas; East(Direction)

53/7,DE/4 (Item 4 from file: 6)  
DIALOG(R)File 6:NTIS  
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1603072 NTIS Accession Number: AD-A239 407/0

Health and Safety Plan Soil Vapor Extraction Treatability Investigation  
Site S within Operable Unit D McClellan Air Force Base

(Draft final rept)

CH2M/Hill, Sacramento, CA.

Corp. Source Codes: 072121000; 423398

Jul 91 66p

Languages: English

Journal Announcement: GRAI9123

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Springfield, VA, 22161, USA.

NTIS Prices: PC A04/MF A01

Country of Publication: United States

The health and safety program for personnel working at McClellan Air  
Force Base (McAFB), California, consists of a base site safety plan (SSP)  
and task specific amendments. The base SSP contains general information  
that applies to all or most areas of the site. The base SSP contains; the  
project description, personnel responsibilities, site hazards, personal  
protective \*\*\*equipment\*\*\* (PPE), air monitoring guidelines, site control,  
\*\*\*decontamination\*\*\* procedures, and an emergency response plan.  
Predominant functions at McAFB have been to manage, maintain, and repair  
aircrafts, \*\*\*missiles\*\*\*, space vehicles, electronics, and communication  
\*\*\*equipment\*\*\*. These operations have required the use of toxic and  
hazardous materials. Some of the hazardous materials that have been used or  
generated on the base include: industrial solvents and caustic cleaners,  
electroplating waste heavy metals, oils contaminated with polychlorinated  
biphenyls, contaminated \*\*\*jet\*\*\* fuels, low-level radioactive wastes,  
unused chemicals, oils and lubricants. Characterization \*\*\*recovery\*\*\* and  
remediation of areas affected by waste disposal practices are ongoing.  
Contaminated drill cuttings and purge water will be generated during field  
activities. Purge water will be disposed of at the industrial waste water  
treatment plant (IWTP) or ground water treatment plant. Drill cuttings and  
contaminated soils will be handled in accordance with the McAFB Soils  
Management Plan.

Descriptors: \*Air force facilities; \*Hazardous materials; Aircraft;  
California; Caustics; Chemicals; Cleaning compounds; Communication  
\*\*\*equipment\*\*\*; Contamination; Control; \*\*\*Decontamination\*\*\*; Drills;  
Electronics; Electroplating; Emergencies; Ground water; Hazards; Heavy  
metals; Industrial plants; Industries; Instructions; \*\*\*Jet\*\*\* engine fuels  
; Low level; Lubricants; Management planning and control; Monitoring; Oils;  
Personnel; Polychlorinated biphenyls; Protective \*\*\*equipment\*\*\*;  
Radioactive wastes; Repair; Response; Safety; Sites; Soils; Solvents;  
Spacecraft; \*\*\*Toxic\*\*\* \*\*\*agents\*\*\*; Waste disposal; Wastes; Water; Water

treatment

53/7,DE/5 (Item 5 from file: 6)  
DIALOG(R)File 6:NTIS  
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1220669 NTIS Accession Number: AD-A162 613/4  
M55 Rocket Disposal Program Study. M55-OD-80. M55 Rocket Separation Study  
(Final rept)  
Kuryk, B. A. ; Bendixen, L. M. ; Cooper, C. B. ; Balasco, A. A. ;  
Johnson, D. E.  
Little (Arthur D.), Inc., Cambridge, MA.  
Corp. Source Codes: 016223000; 208850  
Report No.: ADL-52710  
22 Nov 85 272p  
Languages: English  
Journal Announcement: GRAI8607  
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Springfield, VA, 22161, USA.

NTIS Prices: PC A12/MF A01

Country of Publication: United States

This report presents a conceptual engineering design, cost estimates, a risk assessment and an environmental analysis of a concept for separating the energetic components from the lethal \*\*\*chemical\*\*\* \*\*\*agent\*\*\* contained in M55 rockets. The M55 rocket separation plant conceptual design incorporates, to the maximum extent practicable, the \*\*\*equipment\*\*\* and facilities designed for \*\*\*demilitarization\*\*\* of M55 rockets. The system shall be designed to process 300 rockets per day by removing the \*\*\*chemical\*\*\* \*\*\*agent\*\*\* and transferring it to standard bulk \*\*\*chemical\*\*\* \*\*\*agent\*\*\* storage containers. The rocket \*\*\*warhead\*\*\* and shipping and firing tube shall be punched to enhance the \*\*\*decontamination\*\*\* process. These two rocket sections shall be chemically \*\*\*decontaminated\*\*\* in preparation for storage. The risk analysis for the separation concept identified and quantified potential releases of agent for each site. The worst consequence event during separation operations is a major spill of agent from the interim agent holding tanks. The worst consequence event for storage of the separated rocket components involves earthquake failure of the storage igloos containing bulk agent storage containers. The environmental analysis compared potential impacts of the rocket separation concept with those of continued storage and on-site \*\*\*demilitarization\*\*\* of these munitions. Expected construction impacts for the rocket separation concept are generally insignificant. Impacts of normal operations of the rocket separation concept would be equal to or less than those of on-site \*\*\*demilitarization\*\*\*.

Descriptors: \*Nerve \*\*\*agents\*\*\*; \*\*\*\*Demilitarization\*\*\*; Removal; \*\*\*Chemical\*\*\* ordnance; Neutralization; Separation; Risk; Hazards; Spilling; Storage tanks; Army facilities; Rocket \*\*\*warheads\*\*\*; \*\*\*Decontamination\*\*\*; Environmental impact; Disposal; Vx agent; Gb agent; Release; Life cycle costs; Cost estimates

53/7,DE/6 (Item 6 from file: 6)  
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1196459 NTIS Accession Number: AD-P004 862/9

Chemical \*\*\*Demilitarization\*\*\*: Disposing of the Most Hazardous Wastes  
Scott, J. A. ; Rife, R.

Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, MD.  
Corp. Source Codes: 060995000; 411386

Aug 84 20p

Languages: English

Journal Announcement: GRAI8523

This article is from 'Minutes of the Explosives Safety Seminar (21st)  
Held at Houston, Texas on 28-30 August 1984. Volume 2,' AD-A152 150,  
p853-872.

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Springfield, VA, 22161, USA.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

This country's aging stockpile of chemical warfare (CW) munitions will  
eventually require safe and economical disposal. These CW munitions present  
a unique challenge for \*\*\*demilitarization\*\*\*, since handling of both  
explosives and toxic material is required. The first full scale  
\*\*\*projectile\*\*\* disposal facility is presently under design; construction  
will start on Johnston Island in the summer of 1985. The technology  
developed for incorporation into the Johnston Atoll \*\*\*Chemical\*\*\*  
\*\*\*Agent\*\*\* Disposal System (JACADS) maximizes the use of automated  
\*\*\*equipment\*\*\*, provides the containment necessary to protect the worker  
and environment, and thermally destroys both the toxic fill and explosives  
from the CW munitions. (Author)

Descriptors: \*\*\*\*Chemical\*\*\* warfare \*\*\*agents\*\*\*; \*Explosive ordnance  
disposal; \*\*\*\*Toxic\*\*\* hazards; \*Waste disposal; \*\*\*Demilitarization\*\*\*;  
Stockpiles

53/7,DE/7 (Item 7 from file: 6)

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0940554 NTIS Accession Number: AD-A108 944/0/XAB

Tropic Tests of Chemical \*\*\*Equipment\*\*\*

(Final rept. on test operations procedure)

Army Test and Evaluation Command, Aberdeen Proving Ground, MD.

Corp. Source Codes: 003024000; 041750

Report No.: TOP-8-3-512

15 Dec 81 27p

Languages: English

Journal Announcement: GRAI8209

Supersedes Rept. no. TOP-8-1-002 dated 10 Sep 74.

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Springfield, VA, 22161, USA.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

This Test Operations Procedure (TOP) provides procedures for tropic  
testing of chemical munitions, weapons, and \*\*\*equipment\*\*\* to determine  
their ability to withstand the humid tropic environment. It specifies  
procedures and conditions under which testing, data collection, and data  
evaluation are to be performed. The TOP is applicable to the basic climatic  
design type, Quadripartite Standardization Agreement (QSTAG) equivalents B1

and B2, as specified in AR 70-38. The procedures are oriented to tests on chemical offensive weapons, Defensive \*\*\*equipment\*\*\*, protective \*\*\*equipment\*\*\*, and \*\*\*decontaminating\*\*\* \*\*\*equipment\*\*\*. The TOP divides tropic testing into two parts--Test Conduct and Test Data. It also treats each of these parts according to initial inspection, functional performance, short-term storage, surveillance (long-term storage), maintenance evaluation, human factors security from detection, and value analysis. The TOP provides a guide for test planning and should be used in conjunction with other appropriate Test Operation Procedures for specific commodity items undergoing tests. (Author)

Descriptors: \*Test and evaluation; \*Environmental tests; \*Tropical regions; \*Planning; \*Tropical tests; Weapons; Chemical ordnance; Military \*\*\*equipment\*\*\*; \*\*\*Chemical\*\*\* \*\*\*agents\*\*\*; \*\*\*Chemical\*\*\* \*\*\*projectiles\*\*\*; \*\*\*Chemical\*\*\* warfare \*\*\*agents\*\*\*; Data management; Experimental data; Value; Human factors engineering; Storage; Commodities; Maintenance; Defense systems; \*\*\*Decontamination\*\*\* \*\*\*equipment\*\*\*; Detection; Security; Data acquisition

53/7,DE/8 (Item 8 from file: 6)  
DIALOG(R)File 6:NTIS  
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0905032 NTIS Accession Number: AD-A100 300/3/XAB  
Guidelines Design to Minimize Contamination and to Facilitate \*\*\*Decontamination\*\*\*. Volume II. \*\*\*Equipment\*\*\* and Vehicle Exteriors  
(Special publication)  
Thompson, J. H.  
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Chemical Systems Lab.  
Corp. Source Codes: 054817002; 410170  
Sponsor: Shared Bibliographic Input Experiment.  
Report No.: ARCSL-SR-81005; ARCSL-SP-81015; AD-E410 410  
Oct 80 162p  
Languages: English  
Journal Announcement: GRAI8121  
See also Volume 1, AD-A100 299.  
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NTIS Prices: PC A08/MF A01  
Country of Publication: United States  
This handbook provides guidelines for designing military \*\*\*equipment\*\*\* so as to minimize contamination by \*\*\*chemical\*\*\*, \*\*\*biological\*\*\*, and radiological \*\*\*agents\*\*\* or to increase the effectiveness of \*\*\*decontamination\*\*\* processes. These guidelines do not presume to dictate requirements for the layout, configuration, or construction of military hardware, nor do they prescribe presently used design techniques. The guidelines bring the problems of contamination and \*\*\*decontamination\*\*\* to the attention of designers and suggest approaches to reduce the size of these problems.

Descriptors: \*Combat vehicles; \*Handbooks; \*Contamination; \* \*\*\*Decontamination\*\*\*; \*Military \*\*\*equipment\*\*\*; Chemical warfare \*\*\*agents\*\*\*; \*\*\*Biological\*\*\* warfare \*\*\*agents\*\*\*; Radiological warfare agents; Tanks(Combat vehicles); Howitzers; Guided \*\*\*missile\*\*\* launchers; \*\*\*Recovery\*\*\* vehicles; Armored personnel carriers



53/7,DE/9 (Item 9 from file: 6)  
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0904763 NTIS Accession Number: AD-494 220/7/XAB

Some Comments on the Form of the Drag Coefficient at Supersonic Velocity  
Thomas, R. N.  
Ballistic Research Labs., Aberdeen Proving Ground, MD.  
Corp. Source Codes: 003752000; 050750  
Report No.: BRL-542  
20 Apr 42 45p  
Languages: English  
Journal Announcement: GRAI8121  
Distribution limitation now removed. Order this product from NTIS by:  
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located at 5285 Port Royal Road, Springfield, VA, 22161, USA.  
NTIS Prices: PC A03/MF A01  
Country of Publication: United States  
Contract No.: ORD-4007

A form of representation of the drag curve at supersonic velocity is  
suggested. Only two unknown constants are required for each \*\*\*shell\*\*\*,  
hence firings at two velocities fix the function. For the case of a conical  
head and square \*\*\*base\*\*\*, the problem can be reduced to one constant.  
Good experimental confirmation is found. (Author)

Descriptors: \*\*\*\*Projectiles\*\*\*; Supersonic characteristics; Supersonic  
flow; Drag; Mach number; Conical bodies; Aerodynamic configurations;  
\*\*\*Ogives\*\*\*; Exterior ballistics

53/7,DE/10 (Item 10 from file: 6)  
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0744897 NTIS Accession Number: AD-A062 700/0/XAB

\*\*\*Demilitarization\*\*\* Plan Operation of the \*\*\*Chemical\*\*\* \*\*\*Agent\*\*\*  
Munitions Disposal System (CAMDS) at Tooele Army Depot, Utah. Inclosure no.  
11. \*\*\*Demilitarization\*\*\* Machine Testing and Related Data  
(Final rept)

Office of the Project Manager Chem Demilitarization Install Restoration  
Aberdeen Proving Ground MD  
Corp. Source Codes: 393647  
Report No.: DRCPM-DRD-TR-77020  
Mar 77 142p  
Languages: English  
Journal Announcement: GRAI7910  
Microfiche copies only. Order this product from NTIS by: phone at  
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(703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at  
5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: MF A01  
The \*\*\*Chemical\*\*\* \*\*\*Agent\*\*\* Munition Disposal System (CAMDS) is a  
prototype facility for the large scale destruction of lethal \*\*\*chemical\*\*\*  
\*\*\*agents\*\*\* and munitions. This document contains description and results  
of testing of \*\*\*demilitarization\*\*\* machines being developed for the  
CAMDS.

Descriptors: \*\*\*\*Chemica\*\*\*1 ordnance; \*\*\*\*Chemical\*\*\* \*\*\*agents\*\*\*; \*  
\*\*\*Demilitarization\*\*\*; \*Ordnance disposal \*\*\*tools\*\*\*; \*Machines; Rocket  
propellants; \*\*\*Projectiles\*\*\*; Mines(Ordnance); Mortars; Lethal agents;

Destruction; Safety; Military facilities; Army; Utah

53/7,DE/11 (Item 1 from file: 103)  
DIALOG(R)File 103:Energy SciTec  
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05035311 FRN  
Title: The G8 global partnership against proliferation; Le partenariat mondial du G8 contre la prolifération  
Author(s): Devaux, O. [Secretariat General de la Defense Nationale, 75 - Paris (France)]  
Defense Nationale  
Source: Defense Nationale ; ISSUE: 11 ; PBD: Nov 2003 ISSN: 0336-1489  
Publication Date: 20031101  
Availability Date: 20040223  
Report Number(s): NONE  
OSTI Number(s): DE20427396  
Contract Number (Non-DOE): DFNTAM; TRN FR0400467009952  
Language: French  
Medium/Dimensions: page(s) 174-181  
Abstract: Launched in 2002, the G8 global partnership against the proliferation of massive destruction weapons will contribute up to 20 billion dollars to the dismantling of the nuclear and chemical weapons of the former USSR (20000 nuclear \*\*\*warheads\*\*\* stored in 123 sites, 1350 tons of weapon grade plutonium and enriched uranium, 40000 tons of \*\*\*chemical\*\*\* \*\*\*agents\*\*\*, 190 \*\*\*decommissioned\*\*\* nuclear submarines etc..). This partnership, which has entered its realization phase, inaugurates a new cooperation with the Russian Federation. I could be used tomorrow in other regions of the world and become an \*\*\*instrument\*\*\* of the international community for the fight against proliferation. (J.S.)  
Descriptors: \*\*\*CHEMICAL\*\*\* WARFARE \*\*\*AGENTS\*\*\*; FINANCING; INTERNATIONAL COOPERATION; NON-PROLIFERATION POLICY; NUCLEAR WEAPONS DISMANTLEMENT; RUSSIAN FEDERATION; SAFEGUARDS; SECURITY; SUBMARINES; VULNERABILITY

53/7,DE/12 (Item 1 from file: 156)  
DIALOG(R)File 156:ToxFile  
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00779300 NLM Doc No: NTIS/02650742 Sec. Source ID:  
NTIS/PB2003-107479/XAB  
Chemical Weapons: Sustained Leadership, Along with Key Strategic Management \*\*\*Tools\*\*\*, Is Needed to Guide DOD's Destruction Program.  
General Accounting Office, Washington, DC.  
Source: Govt Reports Announcements & Index (GRA&I), Issue 24, 2003  
Pub. Year: 2003  
Order Information: 48p Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.  
NTIS Prices: PC A04/MF A01  
Languages: UNSPECIFIED  
Record type: Completed  
Report to the Congress. Congress expressed concerns about the Chemical \*\*\*Demilitarization\*\*\* Program cost and schedule, and its management structure. In 2001, the program underwent a major reorganization. Following

a decade long trend of missed schedule milestones, in September 2001, the Department of Defense (DOD) revised the schedule, which extended planned milestones and increased program cost estimates beyond the 1998 estimate of \$15 billion to \$24 billion. GAO was asked to (1) examine the effect that recent organization changes have had on program performance and (2) assess the progress DOD and the Army have made in meeting the revised 2001 cost and schedule and Chemical Weapons Convention (CWC) deadlines. GAO recommends that DOD develop an overall strategy for the Chemical \*\*\*Demilitarization\*\*\* Program that would articulate the programs mission, identify the long-term goals and objectives, delineate the roles and responsibilities of all DOD and Army offices, and establish near-term performance measures. Also, DOD should \*\*\*implement\*\*\* a risk management approach that anticipates and influences internal and external factors that could adversely impact program performance. DOD concurred with GAOs recommendations and said it is taking steps to \*\*\*implement\*\*\* them.

Record Date Created: 200409

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>>>Format 34 is not valid in file 399

53/34/13 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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016738901 \*\*Image available\*\*  
WPI Acc No: 2005-063198/200507

Formation of gun ammunition \*\*\*projectile\*\*\* involves heating compact in \*\*\*jacket\*\*\* to at least melting point of second metal but less than melting point of first metal

Patent Assignee: BEAL INTER VIVOS PATENT TRUST DORIS NEBE (BEAL-N)

Inventor: BEAL H F

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6840149	B2	20050111	US 2001281397	P	20010515	200507 B
			US 2002145927	A	20020515	

Priority Applications (No Type Date): US 2001281397 P 20010515; US 2002145927 A 20020515

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6840149	B2		8	F42B-033/00	Provisional application US 2001281397

Abstract (Basic): US 6840149 B2

NOVELTY - Forming a gun ammunition \*\*\*projectile\*\*\* including a leading end defined by an \*\*\*ogive\*\*\* involves heating the compact in the \*\*\*jacket\*\*\* to a temperature of at least the melting point of the

second metal but less than the melting point of the first metal to result in a liquefied portion of the second metal migrating to and accumulating at the outboard end of the compact. The accumulated second metal is within the \*\*\*jacket\*\*\*.

DETAILED DESCRIPTION - Forming a gun ammunition \*\*\*projectile\*\*\* including a leading end defined by an \*\*\*ogive\*\*\* involves admixing a quantity of a first powdered metal having a first melting point and a first density with a quantity of a second powdered metal having a second and lower melting point and a second and lesser density than the first metal; pressing a quantity of the admixed powdered metals into a self-\*\*\*supporting\*\*\* compact having at least an outboard end; introducing the compact into a cup-shaped \*\*\*jacket\*\*\* having an open end with the outboard end of the compact internally of and adjacent the open end of the \*\*\*jacket\*\*\*; and heating the compact in the \*\*\*jacket\*\*\* to a temperature of at least the melting point of the second metal but less than the melting point of the first metal to result in a liquefied portion of the second metal migrating to and accumulating at the outboard end of the compact. The accumulated second metal is within the \*\*\*jacket\*\*\*.

An INDEPENDENT CLAIM is included for a \*\*\*projectile\*\*\* manufactured as above.

USE - For forming a gun ammunition \*\*\*projectile\*\*\* (claimed).

ADVANTAGE - The novel method provides in-situ formation of a cap for use in gun ammunition. The accuracy of delivery of the \*\*\*projectiles\*\*\* of the invention to a target was consistently within acceptable values. The \*\*\*projectiles\*\*\* exhibited excellent spin stability and accuracies of one minute of angle at 600 yards.

DESCRIPTION OF DRAWING(S) - The figure details the above method.

pp; 8 DwgNo 1/9

#### Technology Focus:

TECHNOLOGY FOCUS - METALLURGY - Preferred Method: The heated compact in the \*\*\*jacket\*\*\* is cooled to solidify the accumulated portion of the second metal. The solidified accumulated portion of the second metal is die-formed within the \*\*\*jacket\*\*\* into a flat disc geometry integral with the outboard end of the compact prior to die-forming an \*\*\*ogive\*\*\* geometry.

Preferred Materials: The first metal is tungsten. The second metal is tin, lead, iron, aluminum, magnesium, bismuth, or their alloys. The first and second powdered metals each exhibit an average particle size of less than or equal to 325 mesh

Derwent Class: K03; Q79

International Patent Class (Main): F42B-033/00

53/34/14 (Item 2 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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016482555 \*\*Image available\*\*

WPI Acc No: 2004-640498/200462

Fuze for use in artillery \*\*\*projectile\*\*\* apparatus comprises fuze \*\*\*housing\*\*\*, fuze electronics having processor and radionavigation receiver contained in fuze \*\*\*housing\*\*\*, power supply, and explosive charge responsive to processor

Patent Assignee: STEELE M F (STEE-I)

Inventor: STEELE M F

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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US 20040159261 A1 20040819 US 2003368112 A 20030218 200462 B

Priority Applications (No Type Date): US 2003368112 A 20030218

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 20040159261 A1 11 F42B-012/02

Abstract (Basic): US 20040159261 A1

NOVELTY - A fuze (22) comprises fuze \*\*\*housing\*\*\*, fuze electronics having processor (48) and radionavigation receiver contained in the fuze \*\*\*housing\*\*\*, power supply (40) configured to power the processor and radionavigation receiver, and explosive charge responsive to the processor. The processor is responsive to the radionavigation receiver to adjust a time where explosive charge is detonated.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(A) an artillery \*\*\*projectile\*\*\* apparatus comprising carrier \*\*\*projectile\*\*\* containing a payload, and fuze disposed at an \*\*\*ogive\*\*\* of the \*\*\*projectile\*\*\* that is configured to eject the payload when the fuze is detonated; and

(B) a method for delivering an artillery \*\*\*projectile\*\*\* payload to a target comprising determining a cargo ejection plane between a gun firing the artillery \*\*\*projectile\*\*\* and the target and nominal ejection event initiation command time to deliver the artillery \*\*\*projectile\*\*\* payload to the target, firing the artillery \*\*\*projectile\*\*\* at the target, acquiring position and time data at the artillery \*\*\*projectile\*\*\* after firing, and adjusting ejection event initiation command time of the artillery \*\*\*projectile\*\*\* payload in accordance with the acquired position and time data at the artillery \*\*\*projectile\*\*\* after firing.

The fuze includes a receiver to receive location information from a radionavigation source; and processor to acquire position data from the receiver, estimate a \*\*\*projectile\*\*\* flight path using the position data, determine intercept parameters of the artillery \*\*\*projectile\*\*\* relative to an ejection plane, and adjust an ejection event initiation command time of the payload in accordance with the determined intercept parameters.

USE - For used in artillery \*\*\*projectile\*\*\* apparatus (claimed).

ADVANTAGE - The invention has a low cost and increased accuracy. It has a reduced \*\*\*projectile\*\*\* launch and flight errors.

DESCRIPTION OF DRAWING(S) - The figure is a partial cross-sectional drawing representative of various configurations of a fuze having fuze configuration for use in configuration of the artillery \*\*\*projectile\*\*\*.

Fuze (22)

Ring antenna (36)

Power supply (40)

Processor (48)

GPS receiver (50)

pp; 11 DwgNo 2/5

Technology Focus:

TECHNOLOGY FOCUS - IMAGING AND COMMUNICATION - Preferred Component:

The receiver is a global positioning satellite (GPS) receiver (50) having variable sampling interval. The GPS receiver is configured to vary its sampling interval during a flight of the apparatus, and coupled to a ring antenna (36) encircling the artillery \*\*\*projectile\*\*\*. The processor is configured to update the ejection plane intercept parameters following acquisition of a GPS data set. The artillery \*\*\*projectile\*\*\* apparatus is further configured to perform

convergence tests on the updated ejection plane intercept parameters following acquisition of a GPS data set, utilize a default ejection timing \*\*\*based\*\*\* upon the timer in the event the convergence tests indicate a GPS anomaly, determine a \*\*\*projectile\*\*\* trajectory intercept angle with the ejection plane, adjust ejection event initiation command time in accordance with the determined \*\*\*projectile\*\*\* trajectory intercept angle, delay \*\*\*projectile\*\*\* ejection event initiation command time when the determined \*\*\*projectile\*\*\* trajectory intercept angle is steeper than a predetermined nominal trajectory, and reduce \*\*\*projectile\*\*\* ejection event initiation command time when the \*\*\*projectile\*\*\* trajectory intercept angle is flatter than the predetermined nominal trajectory. It further includes a timer, and axial conformal circuit boards mounted in front of a battery. The battery is positioned between a safe and arm assembly and the conformal circuit boards. The fuze further includes ring antenna around the fuze \*\*\*housing\*\*\* and electrically coupled to the radionavigation receiver. The fuze electronics are mounted on axial conformal circuit boards. The power supply comprises a right circular cylinder positioned between a fuze safe and arm assembly and fuze circuit boards. The fuze is further configured to adjust the sample rate during a flight of the fuze. Preferred Process: The acquiring of position and time data includes receiving GPS data using a receiver located at the artillery \*\*\*projectile\*\*\*. The delivery of artillery \*\*\*projectile\*\*\* payload to a target further includes sampling the GPS data at a variable rate during flight, updating nominal ejection plane intercept parameters following acquisition of a GPS data set, performing convergence tests on the updated ejection plane intercept parameters following acquisition of a GPS data set, conditioning the adjustment of ejection event initiation command time upon results of the convergence tests, and utilizing a default ejection event initiation command time in the event that the convergence tests indicate a GPS anomaly.

Derwent Class: K03; Q79; W06; W07

International Patent Class (Main): F42B-012/02

53/34/15 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015669882 \*\*Image available\*\*

WPI Acc No: 2003-732069/200369

\*\*\*Projectile\*\*\* for gun ammunition of specified caliber, comprises further infolded distal tip on \*\*\*ogive\*\*\* with lesser angle than angle of infolding of \*\*\*ogive\*\*\* relative to longitudinal centerline of \*\*\*projectile\*\*\*

Patent Assignee: BEAL H F (BEAL-I)

Inventor: BEAL H F

Number of Countries: 103 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200381163	A2	20031002	WO 2003US8441	A	20030319	200369 B
US 20040016357	A1	20040129	US 2002366132	P	20020320	200413
			US 2003391881	A	20030319	
AU 2003225876	A1	20031008	AU 2003225876	A	20030319	200432

Priority Applications (No Type Date): US 2002366132 P 20020320; US 2003391881 A 20030319

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
 WO 200381163 A2 E 20 F42B-000/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
 CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
 IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO  
 NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC  
 VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
 GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ  
 UG ZM ZW

US 20040016357 A1 F42B-010/00 Provisional application US 2002366132

AU 2003225876 A1 F42B-000/00 Based on patent WO 200381163

Abstract (Basic): WO 200381163 A2

NOVELTY - A \*\*\*projectile\*\*\* for a gun ammunition of a size at most 50 caliber comprises a solid metal \*\*\*jacket\*\*\*; a core formed from a mixture of metal powders, except lead; an \*\*\*ogive\*\*\*; a conical tip on the distal end of the \*\*\*ogive\*\*\*; and a further infolded distal tip on the \*\*\*ogive\*\*\*. The further infolding is of a lesser angle than the angle of infolding of the \*\*\*ogive\*\*\* relative to the longitudinal centerline of the \*\*\*projectile\*\*\*.

DETAILED DESCRIPTION - A \*\*\*projectile\*\*\* (10) for a gun ammunition of a size at most 50 caliber comprises a solid metal \*\*\*jacket\*\*\* (28) having a cup-shaped geometry, a closed end, and an open end; a core formed from a mixture of metal powders, excluding lead, which is cold-pressed into a self-\*\*\*supporting\*\*\* compact and disposed within the \*\*\*jacket\*\*\*, incompletely filling the \*\*\*jacket\*\*\*; an \*\*\*ogive\*\*\* (14) having an outer surface defined on an initially open end of the \*\*\*jacket\*\*\*; a conical tip defined on the distal end of the \*\*\*ogive\*\*\*; and a further infolded distal tip (16) on the \*\*\*ogive\*\*\* portion of the \*\*\*projectile\*\*\*. The open end is infolded to define an \*\*\*ogive\*\*\* portion of the \*\*\*projectile\*\*\*. The tip has an outer surface that defines an angle with respect to the longitudinal centerline of the \*\*\*projectile\*\*\* that is less than the angle defined by the \*\*\*ogive\*\*\* with respect to the longitudinal centerline (24) of the \*\*\*projectile\*\*\*. The further infolding is of a lesser angle relative to the longitudinal centerline of the \*\*\*projectile\*\*\* than the angle of infolding of the \*\*\*ogive\*\*\* relative to the longitudinal centerline of the \*\*\*projectile\*\*\*.

USE - Used for gun ammunition of a size of at most 50 caliber (claimed).

ADVANTAGE - The \*\*\*projectile\*\*\* provides at least 50% reduction of materials. It provides reduced aerodynamic drag over the course of its trajectory to a target, providing a \*\*\*projectile\*\*\* that travels from the gun to the target faster. It also permits the same quantity of gun powder to produce a much higher velocity, at the target because of reduced drag, and less loss of velocity during flight of the \*\*\*projectile\*\*\* to a target, providing enhanced accuracy of delivery of the \*\*\*projectile\*\*\* at extended target distances, even under adverse wind conditions. The \*\*\*projectile\*\*\* exhibits a degree of velocity retention and delivery accuracy to target 1000 yards distance from the gun from which the \*\*\*projectile\*\*\* is fired.

DESCRIPTION OF DRAWING(S) - The figure shows a representation of a \*\*\*projectile\*\*\* depicting an exaggerated enlarged different angle of deformation of the extreme distal tip of the \*\*\*jacket\*\*\*.

\*\*\*Projectile\*\*\* (10)

Body portion (12)

\*\*\*Ogive\*\*\* (14)

Distal tip (16)  
 Longitudinal centerline (24)  
 \*\*\*Jacket\*\*\* (28)  
 pp; 20 DwgNo 2/21

## Technology Focus:

TECHNOLOGY FOCUS - MECHANICAL ENGINEERING - Preferred Condition:

The outer surface of the tip defines an angle of 2 - at most 45 degrees, w.r.t the longitudinal centerline of the \*\*\*projectile\*\*\*. The tip extends inwardly of the \*\*\*projectile\*\*\* a distance of 0.003-0.010 inch, preferably 0.003-0.4 inch.

Derwent Class: K03; Q79

International Patent Class (Main): F42B-000/00; F42B-010/00

International Patent Class (Additional): F42B-012/00

53/34/16 (Item 4 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX  
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015627824 \*\*Image available\*\*

WPI Acc No: 2003-689995/200365

\*\*\*Projectile\*\*\* for making gun ammunition has core formed outside cup-shaped \*\*\*jacket\*\*\* and having portion adjacent open end of the \*\*\*jacket\*\*\* that is formed into \*\*\*ogive\*\*\* geometry that incompletely closes the open end and defines cavity within the \*\*\*jacket\*\*\*

Patent Assignee: BEAL H F (BEAL-I); BEAL INTER VIVOS PATENT TRUST DORIS NEBE (BEAL-N)

Inventor: BEAL H F

Number of Countries: 102 Number of Patents: 003

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200373036	A2	20030904	WO 2003US5914	A	20030226	200365 B
US 20030221580	A1	20031204	US 2002359817	P	20020226	200380
			US 2003375518	A	20030226	
AU 2003216440	A1	20030909	AU 2003216440	A	20030226	200428

Priority Applications (No Type Date): US 2002359817 P 20020226; US 2003375518 A 20030226

## Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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WO 200373036	A2	E	20 F42B-000/00	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20030221580	A1		F42B-010/00	Provisional application US 2002359817
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AU 2003216440	A1		F42B-000/00	Based on patent WO 200373036
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Abstract (Basic): WO 200373036 A2

NOVELTY - A \*\*\*projectile\*\*\* useful in the manufacture of gun ammunition comprises a core formed outside a cup-shaped \*\*\*jacket\*\*\* from a mixture metal powders which is cold pressed into a geometric form having an outer sidewall conforming to void volume of the receptacle adjacent its minimum diameter. A portion of the core



adjacent an open end of the \*\*\*jacket\*\*\* is formed into an \*\*\*ogive\*\*\* geometry that incompletely closes the open end and defines a cavity within the \*\*\*jacket\*\*\*.

DETAILED DESCRIPTION - A \*\*\*projectile\*\*\* useful in the manufacture of gun ammunition comprises a cup-shaped \*\*\*jacket\*\*\* having a closed end and an open end, and an inner diameter which decreases in a direction from the open end toward the closed end to define a receptacle for a core, having a void volume and including a minimum diameter adjacent the closed end of the \*\*\*jacket\*\*\* and a maximum diameter adjacent the open end of the \*\*\*jacket\*\*\*; and a core (30) formed outside the \*\*\*jacket\*\*\* from a mixture of at least one metal powder having a density greater than the density of lead and a second metal powder having a density not greater than the density of lead. The mixture of powders is cold pressed into a geometric form having an outer sidewall which conforms to the void volume of the receptacle adjacent its minimum diameter and extending from the minimum diameter toward the open end of the \*\*\*jacket\*\*\* and terminating short of the open end of the \*\*\*jacket\*\*\* to define a void volume inside the \*\*\*jacket\*\*\* and adjacent the open end of the \*\*\*jacket\*\*\*. The core is contained within the receptacle and fills the volume of the receptacle other than the void volume of the \*\*\*jacket\*\*\*. A portion of the core adjacent the open end of the \*\*\*jacket\*\*\* and a portion of the \*\*\*jacket\*\*\* adjacent its open end are formed into an \*\*\*ogive\*\*\* geometry, which incompletely closes the open end of the \*\*\*jacket\*\*\* and defines a cavity within the \*\*\*jacket\*\*\* adjacent the open end and in open communication with the ambient environment outside the \*\*\*jacket\*\*\*.

An INDEPENDENT CLAIM is also included for the manufacture of a \*\*\*projectile\*\*\* useful in the manufacture of gun ammunition, which comprises arranging a cup-shaped, open ended \*\*\*jacket\*\*\* within a first die cavity; forming a powder-\*\*\*based\*\*\* core outside the \*\*\*jacket\*\*\*; inserting the core into the \*\*\*jacket\*\*\* with the core oriented coaxially within the tapered inner wall of the \*\*\*jacket\*\*\* and with their tapers aligned; and applying an axially aligned force against the core to seat the core within the \*\*\*jacket\*\*\* and to embed portions of the core into the tapered inner wall of the \*\*\*jacket\*\*\*.

USE - The \*\*\*projectile\*\*\* is useful in the manufacture of gun ammunition.

ADVANTAGE - The \*\*\*projectile\*\*\* is automated and is capable of accurate subsonic flight to a target. It exhibits enhanced uniformity of density distribution, hence enhanced spin stability when fired from a rifled barrel of a weapon and enhanced frangibility of the \*\*\*projectile\*\*\* upon striking a target.

DESCRIPTION OF DRAWING(S) - The figure is a side view of a powder-\*\*\*based\*\*\* core formed by cold pressing in a die outside the \*\*\*jacket\*\*\*, a mixture of heavy metal powder and a lighter metal powder into a self-\*\*\*supporting\*\*\* compact.

Core (30)

Ends of the core (32, 34)

pp; 20 DwgNo 2/7

Technology Focus:

TECHNOLOGY FOCUS - ELECTRICAL POWER AND ENERGY - Preferred Device: The \*\*\*projectile\*\*\* includes a disc between the maximum diameter end of the core and the open end of the \*\*\*jacket\*\*\*. The disc is deformed into a geometry consistent with the \*\*\*ogive\*\*\* geometry and effectively sealing the core within the \*\*\*jacket\*\*\* and against the escape of powder particles from the \*\*\*jacket\*\*\* via the open communication between the cavity and the ambient environment outside the \*\*\*jacket\*\*\*. The diameter of the core over its length before it is

inserted into the \*\*\*jacket\*\*\* is 0.001 inch less than the inner diameter of the \*\*\*jacket\*\*\* over that length of the \*\*\*jacket\*\*\* which is occupied by the core, commencing at the closed end of the \*\*\*jacket\*\*\*. The core includes an outer wall having minute projections emanating from it, which are at least partially embedded in the inner wall of the \*\*\*jacket\*\*\*.

METALLURGY - Preferred Materials: The core is formed in a die outside the \*\*\*jacket\*\*\* from a mixture of tungsten metal powder and a metal powder including tin, iron, aluminum, bismuth, or copper. The talc is a solid metal, a metal powder, or a mixture of metal powders.

Derwent Class: K03; Q79

International Patent Class (Main): F42B-000/00; F42B-010/00

International Patent Class (Additional): F42B-012/00; F42B-030/00

53/34/17 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015607310 \*\*Image available\*\*

WPI Acc No: 2003-669467/200363

Sabot in combination with subcaliber \*\*\*projectile\*\*\* for use, e.g. in shotgun cartridges, has molded member having \*\*\*base\*\*\* portion and four petal portions, and reinforcement partially embedded in \*\*\*base\*\*\* portion and having central aperture

Patent Assignee: OLIN CORP (OLIN )

Inventor: EBERHART G T; GARDNER R J; MEYER S W

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6564720	B1	20030520	US 2000176217	P	20000114	200363 B
			US 2000686608	A	20001011	

Priority Applications (No Type Date): US 2000176217 P 20000114; US

2000686608 A 20001011

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6564720	B1		9	F42B-014/06	Provisional application US 2000176217

Abstract (Basic): US 6564720 B1

NOVELTY - Sabot in combination with subcaliber \*\*\*projectile\*\*\* has a molded member having a \*\*\*base\*\*\* portion and four petal portions separated from each other by exactly four circumferential gaps; and a reinforcement which is more rigid than the molded member, partially embedded in the \*\*\*base\*\*\* portion, and has a central aperture along a central longitudinal axis of the \*\*\*projectile\*\*\* and several additional apertures.

DETAILED DESCRIPTION - Sabot in combination with subcaliber \*\*\*projectile\*\*\* has a molded member having a \*\*\*base\*\*\* portion (21), four petal portions separated from each other by exactly four circumferential gaps, inboard and outboard surface portions of the sabot interior and exterior circumferential surfaces, and a pair of connecting surfaces along the adjacent gaps connecting the inboard and outboard surface portions, extending forward from a proximal root at the \*\*\*base\*\*\* portion to a distal tip, and cooperating with the \*\*\*base\*\*\* portion to define a volume accommodating the \*\*\*projectile\*\*\* in a pre-firing condition; and a reinforcement which is more rigid than the molded member and is partially embedded in the \*\*\*base\*\*\* portion. The reinforcement has a lateral perimeter, a

central aperture along a central longitudinal axis of the \*\*\*projectile\*\*\*, and several additional apertures with the \*\*\*base\*\*\* portion extending through the additional apertures and effective to retain the reinforcement within the molded member upon firing.

USE - The sabot in combination with a subcaliber \*\*\*projectile\*\*\* is used, e.g. in shotgun cartridges, particularly 12-gauge shotgun.

ADVANTAGE - The incorporation of the reinforcement prevents the disk from separating from the sabot \*\*\*base\*\*\* upon petal blossoming, and prevents the disk from following the bullet \*\*\*base\*\*\* by a distance that causes unsatisfactory bullet accuracy.

DESCRIPTION OF DRAWING(S) - The figure is a longitudinal sectional view of a \*\*\*shell\*\*\* including the sabot.

\*\*\*Base\*\*\* portion (21)

Bullet (42)

\*\*\*Ogive\*\*\* (60)

pp; 9 DwgNo 2/7

#### Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - Preferred Material: The molded member comprises polyethylene.

METALLURGY - Preferred Materials: The reinforcement comprises pressed and sintered iron-\*\*\*based\*\*\* powder. It is metal or a disc.

ELECTRICAL POWER AND ENERGY - Preferred Configuration: The adjacent connecting surfaces of adjacent petals are flat and oriented relative to each other at an angle of 80-110 degrees about the central longitudinal axis. The petal inboard surface portions include a proximal portion with a first diameter to cooperate with a cylindrical body of the \*\*\*projectile\*\*\* and a distal portion formed as a protuberance having a surface portion for engaging an \*\*\*ogive\*\*\* (60) of the \*\*\*projectile\*\*\*. The protuberance has a width of one quarter to 3/4 of a width of a petal portion. The combination is dimensioned for firing from 12-gauge shotgun, where the bullet (42) is a 0.5 caliber secant \*\*\*ogive\*\*\* partition bullet. The reinforcement has a thickness of at least 0.04 to less than 0.12 inch. Each aperture accommodates an associated post portion of the \*\*\*base\*\*\* portion. Each post is of 0.04-0.12 inch in diameter.

Derwent Class: A97; K03; Q79

International Patent Class (Main): F42B-014/06

53/34/18 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015096125 \*\*Image available\*\*

WPI Acc No: 2003-156643/200315

Formation of gun ammunition \*\*\*projectile\*\*\* including leading end defined by \*\*\*ogive\*\*\* includes mixing first and second powdered metals, pressing mixed powdered metals into self-\*\*\*supporting\*\*\* compact having outboard end, and heating compact

Patent Assignee: BEAL H F (BEAL-I)

Inventor: BEAL H F

Number of Countries: 099 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020184995	A1	20021212	US 2001291397	P	20010515	200315 B
			US 2002145927	A	20020515	
WO 2003104742	A2	20031218	WO 2002US15313	A	20020515	200409
AU 2002367930	A1	20031222	AU 2002367930	A	20020515	200445

Priority Applications (No Type Date): US 2001291397 P 20010515; US  
2002145927 A 20020515

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020184995 A1			8	F42B-030/02	Provisional application US 2001291397

WO 2003104742 A2 E F42B-000/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA  
ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 2002367930 A1 F42B-030/02 Based on patent WO 2003104742

Abstract (Basic): US 20020184995 A1

NOVELTY - Formation of a gun ammunition \*\*\*projectile\*\*\* including a leading end defined by an \*\*\*ogive\*\*\* includes mixing a quantity of a first powdered metal with a quantity of second powdered metal; pressing a quantity of the mixed powdered metals into a self-\*\*\*supporting\*\*\* compact having at least an outboard end; and heating the compact to a melting point of the second metal.

DETAILED DESCRIPTION - Formation of a gun ammunition \*\*\*projectile\*\*\* including a leading end defined by an \*\*\*ogive\*\*\* includes mixing a quantity of a first powdered metal having first melting point and density with a quantity of second powdered metal having second, and lower melting point and a second, and lesser, density than the first metal; pressing a quantity of the mixed powdered metals into a self-\*\*\*supporting\*\*\* compact having at least an outboard end; and heating the compact to the melting point of the second metal but less than the melting point of the first metal, for a time sufficient to result in a liquefied portion of the second metal migrating to and accumulating at the outboard end of the compact.

An INDEPENDENT CLAIM is included for a powder-\*\*\*based\*\*\* core having an outboard end, for a gun ammunition \*\*\*projectile\*\*\*, comprising compressed quantity of first and second powdered metals.

USE - Used for forming a gun ammunition \*\*\*projectile\*\*\* (claimed).

ADVANTAGE - In the course of forming the \*\*\*ogive\*\*\*, the disc is deformed into a cup-shaped (hollow hemispherical) geometry, i.e. cap, within the outboard end of the \*\*\*jacket\*\*\*. The cap seals the open end of the \*\*\*jacket\*\*\*, and retains any unbonded or semi-bonded powder particles against their movement within the \*\*\*jacket\*\*\* and to prevent the escape of such particles from the \*\*\*jacket\*\*\*.

DESCRIPTION OF DRAWING(S) - The figure is a schematic flow diagram of the method.

pp; 8 DwgNo 1/9

Technology Focus:

TECHNOLOGY FOCUS - ELECTRICAL POWER AND ENERGY - Preferred Method:

The method includes cooling the heated compact to solidify the accumulated portion of the second metal. It includes die-forming the solidified accumulated portion of the second metal into a flat disc geometry integral with the outboard end of the compact.

INORGANIC CHEMISTRY - Preferred Components: The first metal is tungsten metal. The second metal is tin, lead, iron, aluminum, magnesium, bismuth, and/or their alloys. The first and second powdered metals each exhibits an average particle size of 325 mesh or smaller.

Derwent Class: K03; Q79

International Patent Class (Main): F42B-000/00; F42B-030/02

53/34/19 (Item 7 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX  
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014864820 \*\*Image available\*\*  
 WPI Acc No: 2002-685526/200274

Chemical \*\*\*projectile\*\*\* dismantling system uses holder to hold  
 \*\*\*projectile\*\*\* raised from case and rotate it, when cutting bomb shell  
 and injecting neutralization liquid from storage case

Patent Assignee: SHINKO TECHNO KK (SHIN-N)

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002195800	A	20020710	JP 2000394478	A	20001226	200274 B
JP 3515755	B2	20040405	JP 2000394478	A	20001226	200424

Priority Applications (No Type Date): JP 2000394478 A 20001226

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002195800	A		16	F42B-033/06	
JP 3515755	B2		16	F42B-033/06	Previous Publ. patent JP 2002195800

Abstract (Basic): JP 2002195800 A

NOVELTY - The system has a dismantling \*\*\*equipment\*\*\* (4) formed with a holder (8) to hold and rotate a chemical \*\*\*projectile\*\*\* (100) raised by a raiser (7) from a case moved by a transfer \*\*\*device\*\*\* (6) within a storage case (1) and rotate it. A cutter-cum-cleaner (9) cuts the bombshell of the \*\*\*missile\*\*\* and injects a neutralization liquid filled within the storage case into the bombshell.

DETAILED DESCRIPTION - Every storage case picket out from a neutralization liquid filled transport storage container, which accommodates several storage cases, is filled with neutralization liquid when cleaning the \*\*\*projectiles\*\*\* using the neutralization liquid from neutralization liquid containers circulated in a \*\*\*projectile\*\*\* cleaning \*\*\*equipment\*\*\*. The chemicals filled in the bomb shells are neutralized with the neutralization liquid filled in the storage case.

An INDEPENDENT CLAIM is included for chemical \*\*\*projectile\*\*\* dismantling method.

USE - For \*\*\*decommissioning\*\*\* chemical \*\*\*projectiles\*\*\*.

ADVANTAGE - The \*\*\*chemical\*\*\* \*\*\*agent\*\*\* which has leaked out of the chemical \*\*\*projectiles\*\*\* can be made harmless with the neutralization liquid filled in a transport and storage container, even when the \*\*\*chemical\*\*\* \*\*\*agent\*\*\* leaks through a rusted portion of the bomb shell or due to a shock at the time of transportation. The \*\*\*projectiles\*\*\* can be safely carried and cleaned using the neutralization liquid by a cleaning \*\*\*equipment\*\*\*. The bomb shells can be safely removed and the chemicals can be neutralized, while being rotated from within a storage case filled with the neutralization liquid.

DESCRIPTION OF DRAWING(S) - The figure shows a side sectional view of a chemical \*\*\*projectile\*\*\* dismantling \*\*\*equipment\*\*\*.

Storage case (1)

Chemical \*\*\*projectile\*\*\* dismantling \*\*\*equipment\*\*\* (4)

Transfer \*\*\*device\*\*\* (6)

Raiser (7)

Holder (8)  
 Cutter cum cleaner (9)  
 Chemical \*\*\*projectile\*\*\* (100)  
 pp; 16 DwgNo 1/20  
 Derwent Class: K03; Q79  
 International Patent Class (Main): F42B-033/06

53/34/20 (Item 8 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX  
 (c) 2005 Thomson Derwent. All rts. reserv.

014573876 \*\*Image available\*\*  
 WPI Acc No: 2002-394580/200242

\*\*\*Projectile\*\*\*, for use with ammunition for weapons of different calibers, comprises nose with chamber, tail end, partition separating nose chamber and tail end chamber, and valve  
 Patent Assignee: UNIV MARYLAND BALTIMORE (UYMA-N); RAMASWAMY A L (RAMA-I)  
 Inventor: RAMASWAMY A L  
 Number of Countries: 097 Number of Patents: 003  
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200233343	A2	20020425	WO 2001US32495	A	20011019	200242 B
AU 200214612	A	20020429	AU 200214612	A	20011019	200255
US 20020178960	A1	20021205	US 2000241613	A	20001019	200301
			US 2001982081	A	20011019	

Priority Applications (No Type Date): US 2000241613 P 20001019; US 2001982081 A 20011019

#### Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200233343	A2	E	24	F42B-000/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200214612	A			F42B-000/00	Based on patent WO 200233343
US 20020178960	A1			F42B-010/00	Provisional application US 2000241613

#### Abstract (Basic): WO 200233343 A2

NOVELTY - \*\*\*Projectile\*\*\* comprises a nose (18) having a nose chamber, a tail end (20) adjacent to the nose and having a tail end chamber (24), a partition (26) separating the nose chamber and the tail end chamber, and a valve adjacent to the partition and providing fluid communication from tail end chamber to the nose chamber. The \*\*\*projectile\*\*\* is used with a cartridge case.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(a) Ammunition comprising a cartridge case (4) having a primer (14) in a first chamber (8) of the cartridge case and a first propellant in a second chamber (10) of the cartridge case; the inventive \*\*\*projectile\*\*\* (6) at least partially located in the cartridge case with at least one orifice adjacent to the first propellant; a second propellant in the rear portion chamber; a payload in the nose chamber (22), where upon ignition the primer causes the second propellant to deflagrate and produce a gas which flows through the valve (28) at a predetermined pressure, and the payload is pushed out of the nose cavity by the gas; and

(b) A method of using a weapon against a target, which involves firing a \*\*\*projectile\*\*\* from the weapon toward the target, \*\*\*ejecting\*\*\* a payload from the \*\*\*projectile\*\*\* after it exits the weapon, and impacting the target with the payload.

USE - The \*\*\*projectile\*\*\*, e.g. non-lethal and lethal \*\*\*projectiles\*\*\*, is used with ammunition (claimed) for weapons or arms of different calibers.

ADVANTAGE - The inventive \*\*\*projectile\*\*\* can deploy a payload after being fired from a weapon. It is tailored to travel with a certain velocity and distance to hit a target with a certain calculated impact to incapacitate the target.

DESCRIPTION OF DRAWING(S) - The figure is a cross sectional view of the ammunition.

Cartridge case (4)  
 \*\*\*Projectile\*\*\* (6)  
 First chamber (8)  
 Second chamber (10)  
 Primer (14)  
 Propellant (16,30)  
 Nose (18)  
 Tail end (20)  
 Nose chamber (22)  
 Tail end chamber (24)  
 Partition (26)  
 Valve (28)  
 pp; 24 DwgNo 1/12

#### Technology Focus:

TECHNOLOGY FOCUS - ELECTRICAL POWER AND ENERGY - Preferred

\*\*\*Device\*\*\*: The \*\*\*projectile\*\*\* further comprises a propellant (16,30) within the tail end chamber. The tail end has an orifice, and when the propellant is burned, a gas is produced and the gas vents through the orifice. The \*\*\*projectile\*\*\* further comprises a payload within the nose chamber and which \*\*\*ejects\*\*\* from the nose chamber after the \*\*\*projectile\*\*\* is fired out of the cartridge case.

Preferred Method: The method further involves propelling the \*\*\*projectile\*\*\* toward the target after the firing step by generating a gas in the \*\*\*projectile\*\*\* by deflagrating a propellant in the \*\*\*projectile\*\*\* and venting the gas out of the \*\*\*projectile\*\*\*. The \*\*\*ejecting\*\*\* step involves generating a gas in the \*\*\*projectile\*\*\* by deflagrating a propellant in the \*\*\*projectile\*\*\*, and exerting a pressure on the payload from the gas.

POLYMERS - Preferred Materials: The payload is a \*\*\*chemical\*\*\* \*\*\*agent\*\*\*, an object made of rubber, or a balloon within which a \*\*\*chemical\*\*\* \*\*\*agent\*\*\* is placed. The nose is made of rubber.

Derwent Class: K03; Q79

International Patent Class (Main): F42B-000/00; F42B-010/00

International Patent Class (Additional): F42B-012/00; F42B-030/00

53/34/21 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013981437 \*\*Image available\*\*

WPI Acc No: 2001-465651/200150

Frangible disc, for use in \*\*\*projectile\*\*\* for gun ammunition, comprises metal powder(s) compressed into self-\*\*\*supporting\*\*\* deformable compact

Patent Assignee: BEAL H F (BEAL-I)

Inventor: BEAL H F

Number of Countries: 095 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200155666	A1	20010802	WO 2001US2589	A	20010126	200150 B
AU 200137970	A	20010807	AU 200137970	A	20010126	200174
US 6371029	B1	20020416	US 2000491257	A	20000126	200232
EP 1250562	A1	20021023	EP 2001910355	A	20010126	200277
			WO 2001US2589	A	20010126	
JP 2003524137	W	20030812	JP 2001555763	A	20010126	200355
			WO 2001US2589	A	20010126	

Priority Applications (No Type Date): US 2000491257 A 20000126

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200155666	A1	E	30	F42B-012/74	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP  
KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT  
RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200137970	A			F42B-012/74	Based on patent WO 200155666
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US 6371029	B1			F42B-012/02	
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EP 1250562	A1	E		F42B-012/74	Based on patent WO 200155666
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

JP 2003524137	W		25	F42B-012/74	Based on patent WO 200155666
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Abstract (Basic): WO 200155666 A1

NOVELTY - A frangible disc (12) for use in a \*\*\*projectile\*\*\* for gun ammunition of at least 50 caliber comprises a mixture of metal powders compressed into a self-\*\*\*supporting\*\*\* deformable compact of uniform thickness and density. The \*\*\*projectile\*\*\* includes a core(s) (24) of pressed powder(s) housed within an outer \*\*\*jacket\*\*\* (14) having a longitudinal centerline (20).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of manufacturing the \*\*\*projectile\*\*\* comprising disposing the powder-\*\*\*based\*\*\* core within the \*\*\*jacket\*\*\*, disposing the powder-\*\*\*based\*\*\* disc within the \*\*\*jacket\*\*\* adjacent to the core, pressing the core and disc simultaneously within a portion of the interior volume of the \*\*\*jacket\*\*\*, and die-forming an \*\*\*ogive\*\*\* (28) at the open end (18) of the \*\*\*jacket\*\*\* by forcing it into a die cavity.

USE - For use in a \*\*\*projectile\*\*\* of gun ammunition, e.g. rifle or pistol ammunition, of at most 50 caliber.

ADVANTAGE - The disc is able to withstand the required deformation without disintegrating. It yields a \*\*\*projectile\*\*\* that can be delivered more accurately and can be manufactured with consistent performance.

DESCRIPTION OF DRAWING(S) - The figure is a schematic sectional representation of the gun ammunition \*\*\*projectile\*\*\* incorporating the frangible disc.

Disc (12)

\*\*\*Jacket\*\*\* (14)

Open end of the \*\*\*jacket\*\*\* (18)

Centerline (20)

Core (24)

\*\*\*Ogive\*\*\* (28)

pp; 30 DwgNo 1/14

Technology Focus:



TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Material: The powder comprises tin, iron, magnesium, aluminum, copper, zinc, bismuth, and/or lead.

Preferred Parameter: The powder exhibits a particle size distribution comprising at least 60% (preferably at least 20%) of the particles of 200-325 (preferably less than 325) mesh. The powder is pressed in the die cavity of right cylindrical geometry at 12000-16000 psi. The compact exhibits a maximum deformation angle of 89 degrees.

POLYMERS - Preferred Material: The powder may also comprise a polymeric material.

MECHANICAL ENGINEERING - Preferred Method: The method further comprises die-forming a boat tail on the end of the \*\*\*projectile\*\*\* opposite the \*\*\*ogive\*\*\*. The disc and the core are deformed to the extent that the disc fills and closes the open end of the \*\*\*jacket\*\*\*.

Derwent Class: K03; Q79

International Patent Class (Main): F42B-012/02; F42B-012/74

53/34/22 (Item 10 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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013652794 \*\*Image available\*\*

WPI Acc No: 2001-137006/200114

Subsonic expansion \*\*\*projectile\*\*\* used for firing from firearm, has \*\*\*jacket\*\*\* and core with \*\*\*jacket\*\*\* scores and core cuts, respectively that separate individually upon initial and completion of impact of \*\*\*projectile\*\*\*

Patent Assignee: ENGEL BALLISTIC RES INC (ENGE-N)

Inventor: ENGEL J W

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6176186	B1	20010123	US 99327863	A	19990608	200114 B

Priority Applications (No Type Date): US 99327863 A 19990608

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6176186	B1		9	F42B-012/34	

Abstract (Basic): US 6176186 B1

NOVELTY - The \*\*\*projectile\*\*\* consists of a cylindrical \*\*\*jacket\*\*\* (2) which surrounds a longitudinal malleable core. The core has core cuts (7) which separate individually upon initial impact of the \*\*\*projectile\*\*\* with a target as expansion of \*\*\*projectile\*\*\* begins. The \*\*\*jacket\*\*\* has \*\*\*jacket\*\*\* scores (8) which separate individually upon completion of impact of \*\*\*projectile\*\*\* until disintegration of the \*\*\*projectile\*\*\* has occurred.

DETAILED DESCRIPTION - The core is divided at an \*\*\*ogive\*\*\* core portion (28) of the nose (22) of \*\*\*projectile\*\*\* into four equal sized core petals (4) by four equispaced core cuts. The \*\*\*jacket\*\*\* is divided, with the exception of its closed \*\*\*base\*\*\* (13), into five equal sized \*\*\*jacket\*\*\* petals (5) by five equispaced \*\*\*jacket\*\*\* scores. The \*\*\*jacket\*\*\* scores and core cuts are misaligned when the core rests within the \*\*\*jacket\*\*\*.

USE - Used for firing from firearm.

ADVANTAGE - Offers a \*\*\*jacketed\*\*\* \*\*\*projectile\*\*\* which utilizes a scored \*\*\*jacket\*\*\* which allows adequate \*\*\*jacket\*\*\* expansion.

Provides an expansive bearing insert to aid \*\*\*jacket\*\*\* and core expansion of \*\*\*projectile\*\*\* upon impact.

DESCRIPTION OF DRAWING(S) - The figure shows the side view of the completed \*\*\*projectile\*\*\*.

\*\*\*Jacket\*\*\* (2)

Core petals (4)

\*\*\*Jacket\*\*\* petals (5)

Core cuts (7)

\*\*\*Jacket\*\*\* scores (8)

\*\*\*Base\*\*\* (13)

Nose (22)

\*\*\*Ogive\*\*\* core portion (28)

pp; 9 DwgNo 2/6

Derwent Class: Q79

International Patent Class (Main): F42B-012/34

53/34/23 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013215626 \*\*Image available\*\*

WPI Acc No: 2000-387500/200033

Method of \*\*\*decontaminating\*\*\* object or cloud of \*\*\*biological\*\*\* or \*\*\*chemical\*\*\* warfare \*\*\*agent\*\*\*, by \*\*\*spraying\*\*\* with aerosol containing hydrogen peroxide and peracetic acid and illuminating with ultraviolet

Patent Assignee: CLEAN EARTH TECHNOLOGIES LLC (CLEA-N); CURRY R D (CURR-I); GOLDEN J (GOLD-I)

Inventor: CURRY R D; GOLDEN J

Number of Countries: 091 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200028552	A1	20000518	WO 99US26451	A	19991108	200033 B
AU 200014734	A	20000529	AU 200014734	A	19991108	200041
EP 1138047	A2	20011004	EP 99971960	A	19991108	200158
			WO 99US26451	A	19991108	
US 6692694	B1	20040217	US 98107617	P	19981109	200413
			US 99436058	A	19991108	
US 20040170526	A1	20040902	US 98107617	P	19981109	200458
			US 99436058	A	19991108	
			US 2003750047	A	20031231	
US 20040219057	A1	20041104	US 98107617	P	19981109	200473
			US 99436058	A	19991108	
			US 2003750048	A	20031231	
IL 143058	A	20050220	IL 143058	A	19991108	200522

Priority Applications (No Type Date): US 98107617 P 19981109; US 99436058 A 19991108; US 2003750047 A 20031231; US 2003750048 A 20031231

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200028552 A1 E 44 G21F-009/00

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200014734 A G21F-009/00 Based on patent WO 200028552

EP 1138047 A2 E G21F-009/00 Based on patent WO 200028552  
 Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
 LU MC NL PT SE  
 US 6692694 B1 A61L-009/015 Provisional application US 98107617  
 US 20040170526 A1 A61L-002/16 Provisional application US 98107617  
 Cont of application US 99436058  
 Cont of patent US 6692694  
 US 20040219057 A1 A61L-002/10 Provisional application US 98107617  
 Cont of application US 99436058  
 Cont of patent US 6692694  
 IL 143058 A A61L-009/015 Based on patent WO 200028552

Abstract (Basic): WO 200028552 A1

NOVELTY - Method of \*\*\*decontaminating\*\*\* a contaminated surface (22) by \*\*\*spraying\*\*\* (24) a photosensitizer (20) onto the contaminated surface, the photosensitizer being electrically charged so that it is attracted to the surface; and illuminating the \*\*\*sprayed\*\*\* surface with light (26) to cause chemical reactions to \*\*\*decontaminate\*\*\* the surface.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:-

(1) a method of \*\*\*decontaminating\*\*\* a non-conducting surface by providing a non-conducting backing; and \*\*\*spraying\*\*\* photosensitizer as above;

(2) a method including surrounding the object with a barrier; \*\*\*spraying\*\*\* electrically charged photosensitizer so that excess photosensitizer is attracted to the barrier;

(3) a method including surrounding the object with a barrier and establishing an airflow around the object within the barrier; and

(4) a method of \*\*\*decontaminating\*\*\* a cloud containing an aerosol contaminant by applying an aerosol photosensitizer and illuminating the cloud.

USE - \*\*\*Decontamination\*\*\* in emergency civilian and military situations of vehicles, personnel, \*\*\*apparatus\*\*\*, and airborne clouds created by chemical and biological weapons. The method may also be applied to industrial processes, such as cleaning circuit boards, benches, \*\*\*equipment\*\*\*, or \*\*\*decontaminating\*\*\* food, pharmaceutical products, air, water, sewage, blood, etc.

ADVANTAGE - The method can be used in the field. It can be rapidly deployed and used in widely differing circumstances. It is more flexible than known \*\*\*decontamination\*\*\* methods. The products can be easily collected and neutralized. The method can be used to \*\*\*decontaminate\*\*\* an uncontrollable object such as a cloud of hazardous material.

DESCRIPTION OF DRAWING(S) - The drawing shows a vehicle being \*\*\*decontaminated\*\*\* by the method.

vehicle (22)

\*\*\*spray\*\*\* gun (24)

aerosol (20)

ultraviolet illumination (26)

pp; 44 DwgNo 1/13

Technology Focus:

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Features: - The photosensitizer is a solution of which at least one component is electrically charged. The temperature of the photosensitizer is controlled to enhance formation rate, mobility or \*\*\*decontaminating\*\*\* rate of photoproducts and their reactions. The photosensitizer includes hydrogen peroxide and/or peracetic acid, in the proportions 1% to 10%,

and 0.01% to 1% respectively. Illumination is by a continuous beam. The illuminating wavelength is between 200nm and 320nm. The light is from a short-arc flash bulb or a pulsed beam. The pulse length is 0.1 to 1000 microseconds. The pulsed beam has a repetition frequency and exposure time to create a fluence of at least 1 mJ/cm<sup>2</sup> preferably up to 150 mJ/cm<sup>2</sup>, at an average power level of 1 mW/cm<sup>2</sup>. Peak power is 10 to 100 mW/cm<sup>2</sup>. The photosensitizer includes a surfactant and/or carrier particles. The photosensitizer is ZEROTOL or RENALIN. The barrier is charged or grounded. The light is ultraviolet. The barrier is opaque to ultraviolet. The aerosol is applied by aircraft or \*\*\*projectile\*\*\*. The cloud is illuminated by an airborne light source, a ground-based light source or by pyrotechnic.

## Extension Abstract:

EXAMPLE - In an EMBODIMENT the ultraviolet light exposure at the object is measured and the illumination controlled to give the required integrated exposure.

Derwent Class: B07; C07; D13; D15; D22; E17; E36; K02; K07; P34; P35; P43  
International Patent Class (Main): A61L-002/10; A61L-002/16; A61L-009/015; G21F-009/00  
International Patent Class (Additional): A61L-002/08; A62D-003/00; B01D-053/00; B09B-003/00; C07C-001/00

53/34/24 (Item 12 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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012999595 \*\*Image available\*\*  
WPI Acc No: 2000-171447/200015

Hard target incendiary \*\*\*projectile\*\*\* for air dropping has secondary ignition fuse elements in existing casing member  
Patent Assignee: LOCKHEED MARTIN CORP (LOCK )  
Inventor: JONES J W  
Number of Countries: 087 Number of Patents: 009

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200005545	A2	20000203	WO 99US10490	A	19990616	200015 B
AU 200014392	A	20000214	AU 200014392	A	19990616	200029
US 6105505	A	20000822	US 9898472	A	19980617	200042
NO 200006413	A	20010202	WO 99US10490	A	19990616	200115
			NO 20006413	A	20001215	
EP 1088200	A2	20010404	EP 99963127	A	19990616	200120
			WO 99US10490	A	19990616	
KR 2001071493	A	20010728	KR 2000714306	A	20001216	200208
JP 2002521641	W	20020716	WO 99US10490	A	19990616	200261
			JP 2000561464	A	19990616	
AU 754110	B	20021107	AU 200014392	A	19990616	200302
IL 140339	A	20031010	IL 140339	A	19990616	200402

Priority Applications (No Type Date): US 9898472 A 19980617

## Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
WO 200005545 A2 E 43 F42C-000/00

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN  
CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK  
SL TJ TM TR TT UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 200014392 A F42C-000/00 Based on patent WO 200005545  
 US 6105505 A F42B-010/00  
 NO 200006413 A F42B-012/44  
 EP 1088200 A2 E F42B-010/00 Based on patent WO 200005545  
 Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
 LU MC NL PT SE  
 KR 2001071493 A F42B-025/00  
 JP 2002521641 W 69 F42B-025/00 Based on patent WO 200005545  
 AU 754110 B F42B-010/00 Previous Publ. patent AU 200014392  
 Based on patent WO 200005545  
 IL 140339 A F42B-012/44 Based on patent WO 200005545

## Abstract (Basic): WO 200005545 A2

NOVELTY - The incendiary \*\*\*projectile\*\*\* (301) uses an existing casing (312) filled with an incendiary filling (314). A rear opening in the casing is occluded by an aft closure (302). A fuse (304) is fitted to ignite the incendiary filling after target penetration and increase the casing pressure from combustion products. The aft closure is blown out at a predetermined level to expel the burning filling into the interior of the target.

DETAILED DESCRIPTION - The \*\*\*projectile\*\*\* can also carry additional payloads such as chemicals, radioactive materials, and electric/electronic \*\*\*devices\*\*\* that can be \*\*\*ejected\*\*\* from within the casing into the target. An INDEPENDENT CLAIM is also included for a method for attacking a target using an incendiary \*\*\*projectile\*\*\*.

USE - As an incendiary \*\*\*projectile\*\*\* for air dropping onto hard targets that contain \*\*\*biological\*\*\* or \*\*\*chemical\*\*\* \*\*\*agents\*\*\* or are flammable.

ADVANTAGE - The \*\*\*projectile\*\*\* uses components from existing high explosive \*\*\*projectiles\*\*\* to create fires in the interior of hard targets using existing air dropping delivery systems.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic of the \*\*\*projectile\*\*\*.

\*\*\*Projectile\*\*\* (301)  
 Aft closure (302)  
 Explosive fuse (304)  
 Fuse conduit arrangement (306)  
 Electrical power generator for FZU unit (308)  
 Well for FZU unit (309)  
 \*\*\*Projectile\*\*\* attachment fittings (310)  
 \*\*\*Projectile\*\*\* casing (312)  
 Incendiary filling (314)  
 Optional void space (316)  
 Tar casing liner (318)  
 pp; 43 DwgNo 3/20

Derwent Class: Q79

International Patent Class (Main): F42B-010/00; F42B-012/44; F42B-025/00;  
 F42C-000/00

53/34/25 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012953864 \*\*Image available\*\*

WPI Acc No: 2000-125714/200011

Weapon transport \*\*\*device\*\*\*, e.g. cruise \*\*\*missile\*\*\*, for transporting a target-intended weapon along a path towards a target in hostile territory

Patent Assignee: HONIGSBAUM R F (HONI-I)

Inventor: HONIGSBAUM R F

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6003809	A	19991221	US 97804635	A	19970225	200011 B

Priority Applications (No Type Date): US 97804635 A 19970225

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6003809	A	12	F41G-007/00	

Abstract (Basic): US 6003809 A

NOVELTY - The \*\*\*device\*\*\* includes a target-intended weapon (307) and additional \*\*\*biological\*\*\*, \*\*\*chemical\*\*\* or radioactive \*\*\*agents\*\*\* (340a,b) for attacking occupants of the hostile territory should they execute countermeasures against the transport \*\*\*device\*\*\*. The additional agents are initiated upon detection of the \*\*\*device\*\*\* straying a predetermined amount from its intended path or passing a predetermined point beyond its intended target or if its sensors are blinded.

DETAILED DESCRIPTION - The transport includes a guidance system (306) that incorporates a sensor for providing information for guiding the \*\*\*device\*\*\* along at least a portion of its intended path and a global positioning system (GPS) receiver (350) for determining its position. The target intended weapon is \*\*\*salvage\*\*\* fused and the additional agents are mounted to the \*\*\*device\*\*\* in e.g. externally mounted canisters which can be detached from the \*\*\*missile\*\*\* to be deployed upon the detection of countermeasures.

An INDEPENDENT CLAIM is included for a process for discouraging countermeasures against a weapon transport system used to transport a weapon along a path towards a target in hostile territory.

USE - For use with weapon transport \*\*\*devices\*\*\* e.g. cruise \*\*\*missiles\*\*\*, that are used to transport target-intended weapons, e.g. high explosive, antipersonnel / anti-material submunitions, incendiary or runway-cratering submunitions, along a path towards a target in hostile territory.

ADVANTAGE - The additional agents act to discourage the use of countermeasures against weapon transport \*\*\*devices\*\*\*.

DESCRIPTION OF DRAWING(S) - A sectional view of one embodiment of the weapon transport \*\*\*device\*\*\*.

Guidance system (306)

Target-intended weapon (307)

Additional \*\*\*biological\*\*\*, \*\*\*chemical\*\*\* or radioactive \*\*\*agent\*\*\* (340a,b)

GPS receiver (350)

pp; 12 DwgNo 3/4

Derwent Class: Q25; Q79; W07

International Patent Class (Main): F41G-007/00

International Patent Class (Additional): B64D-001/04; F42B-015/10; F42B-025/00

53/34/26 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011572569 \*\*Image available\*\*

WPI Acc No: 1997-549050/199750

Resupply artillery \*\*\*projectile\*\*\* that delivers logistic supplies - in which parachute equipped resupply canisters are fitted inside artillery \*\*\*shells\*\*\*

Patent Assignee: US SEC OF ARMY (USSA )

Inventor: DEAN C E

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5684267	A	19971104	US 97794793	A	19970204	199750 B

Priority Applications (No Type Date): US 97794793 A 19970204

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5684267	A		8	F42B-012/62	

Abstract (Basic): US 5684267 A

\*\*\*Projectile\*\*\* has a \*\*\*shell\*\*\* body (10) for holding logistic supplies inside. The body (10) has the capability of rapidly and accurately transporting the supplies to forward disposed combatants without interference of weather, terrain or enemy action.

\*\*\*Projectile\*\*\* \*\*\*base\*\*\* plug (22) is attached to a rear end (24) of body (10). An \*\*\*ogive\*\*\* section (12) is located on the \*\*\*shell\*\*\* body forward end with a fuse (10) threadably attached to \*\*\*ogive\*\*\* (12). \*\*\*Ogive\*\*\* space (14) is located in the \*\*\*ogive\*\*\* (12).

Canister (26) holds the logistics supplies in body (10) so that the supplies can be safely delivered. It includes a hollow cylindrical shaped steel canister body (26) having a slotted open forward end (62) and a fixed closed rear end cap operatively connected to the canister body (26). Circular locking plate (64) has a locking plate boss (66) axially positioned on a forward side, a locking plate groove operatively located on a rear side of the locking plate (64), and locking legs extending from a peripheral edge of the locking plate (64).

Locking plate (64) is slidably disposed in the open slotted forward end (62). Removable end cap (32) has pins (34) located in a side wall of the end cap (32) for operatively engaging and removably locking the end cap (32) to the canister (26) slotted forward end (62). A spring is operatively compressed between the locking plate (64) and the removable end cap (32). Pair of semicircular locking rings (30,30') are positioned next to the end cap (32), with a forward spacer ring (28) in juxtaposition with the locking rings. The fuse (16) initiates the explosion of canister (26) from the \*\*\*shell\*\*\* body (10) at the proper time.

The fuse includes an explosion charge cap for holding an explosive charge therein, parachute mechanism for separating the canister (26) from the body (10) and safely delivering canister (10) to a specified target area, and a fin mechanism for de-spinning the canister (10) after it is separated from the body (10) when it is over the target area.

USE - \*\*\*Projectile\*\*\* used for resupply of items by firing the \*\*\*projectile\*\*\* to distant troops in which such items are carried inside the \*\*\*projectile\*\*\*.

ADVANTAGE - It can deliver critical logistic supplies and accurately to forward embattled combatants with minimum risk to supply personnel or transport equipment and which is not hampered by either weather or terrain.

Dwg.1,2/11

Derwent Class: K03; Q79

International Patent Class (Main): F42B-012/62

53/34/27 (Item 15 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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011457619 \*\*Image available\*\*

WPI Acc No: 1997-435526/199740

Gun for firing fluid \*\*\*projectile\*\*\* - has launching initiation circuit  
and trigger to cause fluid to be symmetrically thrust from open end of  
barrel

Patent Assignee: CROSSLEY P A (CROS-I); FITTER J C (FITT-I)

Inventor: CROSSLEY P A; FITTER J C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
ZA 9608209	A	19970730	ZA 968209	A	19960930	199740 B

Priority Applications (No Type Date): ZA 957314 A 19950831

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
ZA 9608209	A	26	F41B-000/00	

Abstract (Basic): ZA 9608209 A

A fluid \*\*\*projectile\*\*\* launcher comprises a barrel with an open end (48) and a closed end (50) forming a breech portion holding a dosage of fluid (56). A launching initiation circuit includes a capacitor (22) storing energy. Energy is applied to the breech portion which includes symmetrical thrust-generating and perpetuating \*\*\*devices\*\*\*. A trigger allows the capacitor to discharge into the fluid to cause it to be symmetrically thrust from the open end of the barrel as a \*\*\*projectile\*\*\*.

USE - The gun may be used to disable an attacker by inclusion of a substance in the fluid which creates immediate pain, e.g. an organic irritant such as capsaicin from chilli peppers, or substances from bees, wasps, hornets, nettles. It may also be used to deliver a vaccine or insecticide to an animal, a nutrient, a \*\*\*poison\*\*\*, a pain-inducing \*\*\*substance\*\*\* or a disabling agent. It can also be used to deliver a dye to an attacker.

ADVANTAGE - The fluid is symmetrically thrust from the barrel allowing the fluid to be \*\*\*ejected\*\*\* in globular form rather than scattering widely on emerging from the barrel.

Dwg.1/2

Derwent Class: B07; C07; K03; P34; P42; Q79; S05

International Patent Class (Main): F41B-000/00

International Patent Class (Additional): A61M-000/00; B05B-000/00

53/34/28 (Item 16 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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010946730 \*\*Image available\*\*

WPI Acc No: 1996-443680/199645

\*\*\*Warhead\*\*\* with initial and main hollow charges - for attacking active targets with initial charge in tube moved into extended position by propellant charge

Patent Assignee: DAIMLER-BENZ AEROSPACE AG (DAIM );

MESSERSCHMITT-BOELKOW-BLOHM GMBH (MESR ); SCHRODL G (SCHR-I); SPENGLER H



(SPEN-I)

Inventor: SCHROEDL G; SPENGLER H; SCHRODL G

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3633535	C1	19960926	DE 3633535	A	19861002	199645 B
FR 2736714	A1	19970117	FR 8713578	A	19871001	199712
US 5621185	A	19970415	US 87118299	A	19871001	199721

Priority Applications (No Type Date): DE 3633535 A 19861002

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 3633535	C1		4	F42B-012/16	
FR 2736714	A1		10	F42B-012/18	
US 5621185	A		5	F42B-012/18	

Abstract (Basic): DE 3633535 C

Active targets are attacked with a \*\*\*warhead\*\*\* with an initial hollow charge (2), held by one or several shear pins (7) in a tube (5) and a coaxial main hollow charge (1). The tube and a \*\*\*supporting\*\*\* arrangement (10) are in an ogival section of the \*\*\*warhead\*\*\* and are provided with an interacting latching device, e.g. stops or a ring flange, so that, after ignition of a propellant charge (3), the tube is displaceable to an extended operating position and latches there. A sensor (9) is provided in the front part of the ogival section for detecting the correct spacing for activation of the propellant charge. When the tube is extended a contact (6) for the main charge is activated.

ADVANTAGE -- Combustion space for ejection of the initial hollow charge is enlarged, allowing increase in calibre.

Dwg.1/2

Abstract (Equivalent): US 5621185 A

\*\*\*Warhead\*\*\* having a flight direction comprises: (a) a \*\*\*casing\*\*\* having a central axis extending in the flight direction, the \*\*\*casing\*\*\* being a first end leading in the flight direction and an opposite second end; (b) a preliminary shaped charge located within the \*\*\*casing\*\*\*; (c) a coaxial main shaped charge located in the \*\*\*casing\*\*\* spaced along the central axis between the preliminary shaped charge and the second end of the \*\*\*casing\*\*\*; (d) device for increasing the axial spacing between the preliminary shaped charge and the main shaped charge prior to triggering detonation of the preliminary shaped charge, the spacing increasing device comprising an axially extending tube located within the \*\*\*casing\*\*\* and extending generally in parallel relative to the central axis, the tube having a first end closer to the first end of the \*\*\*casing\*\*\* and a second end closer to second end of the \*\*\*casing\*\*\*; (e) a propelling charge for the preliminary shaped charge located within the tube between the preliminary shaped charge and the second end of the tube, the propelling charge is ignited by an igniting device for accelerating the preliminary shaped charge forward and out of the tube and for moving the tube out of the first end of the \*\*\*casing\*\*\*, the \*\*\*casing\*\*\* having an axially extending \*\*\*ogive\*\*\* portion extending from the first end of the \*\*\*casing\*\*\* toward the second end of it; (f) device within the \*\*\*ogive\*\*\* portion for \*\*\*supporting\*\*\* the tube, at least one shearing pin located within the tube for securing the preliminary shaped charge in spaced relation from the first end of the tube, the tube being displaceable from a moved-in rest position within the \*\*\*casing\*\*\* to a moved-out working position extending axially out of the first end of the \*\*\*casing\*\*\*; (g) device on one of the tube and

the device for \*\*\*supporting\*\*\* the tube for securing the tube in the device for \*\*\*supporting\*\*\* the tube in the moved-out position; and (h) a sensor for the preliminary shaped charge located in the \*\*\*ogive\*\*\* part.

Dwg.1/2

Derwent Class: K03; Q79

International Patent Class (Main): F42B-012/16; F42B-012/18

53/34/29 (Item 17 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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010732424 \*\*Image available\*\*

WPI Acc No: 1996-229379/199623

Uninitiated munition that self neutralises after deployment - has components made of environmentally friendly degradable materials which cause munition failure upon environmental exposure

Patent Assignee: DIPIETROPOLO A (DIPI-I)

Inventor: DIPIETROPOLO A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5511482	A	19960430	US 94272597	A	19940711	199623 B

Priority Applications (No Type Date): US 94272597 A 19940711

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5511482	A	10	F42B-012/00	

Abstract (Basic): US 5511482 A

Munition \*\*\*device\*\*\* for release of an explosive cpd., \*\*\*chemical\*\*\* or \*\*\*biological\*\*\* \*\*\*agent\*\*\*. The \*\*\*agent\*\*\* is released upon detonation. The munition has a housing (41) for housing the agent, detonator (47) and a biodegradable material consisting of biodegradable plastic. The material is integrated into at least one of the components of the munition e.g. the housing (41) or significant body parts of detonator assembly (47). The munition is armed and located in an environment. The biodegradable material is exposed to the environment and degrades over a predetermined time period so that the component(s) is destroyed and the munition is inoperative.

USE - Munition or ordnance \*\*\*device\*\*\* (e.g. mines, grenades) that remains uninitiated after deployment, undergoes self neutralisation through the use of environmentally degradable materials that were used in the munition's construction.

ADVANTAGE - It avoids the expense and danger incurred in manually neutralising unexploded munitions e.g. in preparation for returning land to general use, reduces the change of enemy forces \*\*\*retrieving\*\*\* unexploded \*\*\*projectiles\*\*\*, and the danger to civilians will be greatly reduced through the elimination of armed \*\*\*projectiles\*\*\* scattered throughout the area.

Dwg.4/4

Derwent Class: K03; Q79

International Patent Class (Main): F42B-012/00

53/34/30 (Item 18 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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008614408 \*\*Image available\*\*

WPI Acc No: 1991-118438/199117

\*\*\*Projectile\*\*\* carrying practice bomblets - with \*\*\*casings\*\*\* made of paper or plastic material

Patent Assignee: RHEINMETALL GMBH (RHEM ); RHEINMETALL IND GMBH (RHEM )

Inventor: ALTENAU E W; FSCHER S; PALTEN M; ALTENAU E; FISCHER S

Number of Countries: 004 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3934362	A	19910418	DE 3934362	A	19891014	199117 B
EP 423424	A	19910424	EP 90109953	A	19900525	199117
US 5076171	A	19911231	US 90597337	A	19901015	199204
EP 423424	A3	19920617	EP 90109953	A	19900525	199333
EP 423424	B1	19950628	EP 90109953	A	19900525	199530
DE 59009327	G	19950803	DE 509327	A	19900525	199536
			EP 90109953	A	19900525	

Priority Applications (No Type Date): DE 3934362 A 19891014

Cited Patents: NoSR.Pub; AT 83504; DE 3506889; DE 3809177

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 423424 A  
Designated States (Regional): DE FR GBEP 423424 B1 G 9 F42B-012/62  
Designated States (Regional): DE FR GB

DE 59009327 G F42B-012/62 Based on patent EP 423424

. Abstract (Basic): DE 3934362 A

A \*\*\*projectile\*\*\* (10) carrying in its case (12) the practice bomblets (14), and in its \*\*\*ogive\*\*\* (22) an ejection charge (26) is fired by an axial gas passage (30, 30'). The \*\*\*casings\*\*\* for each bomblet are made of paper or plastic material. These bomblet \*\*\*casings\*\*\* are \*\*\*supported\*\*\* in the \*\*\*shell\*\*\* (12) as stacks of layers by elements of plates (42) across the \*\*\*projectile\*\*\* axis and by axial elements (44) which fill the voids between pairs of (42).

ADVANTAGE - The bomblet \*\*\*casings\*\*\* of paper or plastic material instead of metal reduce weight and can withstand the high acceleration forces. The bomblets do not sink in morass, snow, sand or water, thus preserving the soil signature of the shot. (7pp Dwg.No.1/11)

Abstract (Equivalent): EP 423424 B

Bomblet carrier \*\*\*projectile\*\*\* with practice bomblets (14) which are situated in the \*\*\*projectile\*\*\* \*\*\*casing\*\*\* (12) and of which the free spaces are filled with packing pieces (44) which can be stacked in the axial direction, a detonator being provided in the front zone (22) of the \*\*\*projectile\*\*\* with an ejection unit which comprises an ejection charge (26) and an ejection plate (28) and by means of which the practice bomblets (14) are ignited via a gas passage channel (30, 30') extending coaxially with the \*\*\*projectile\*\*\* axis and ejected from the carrier \*\*\*projectile\*\*\* \*\*\*casing\*\*\* (12) over the target area, characterised by the following features: (a) each practice bomblet (14) has a \*\*\*housing\*\*\* manufactured from a paper and/or a plastic \*\*\*base\*\*\*, of which the strength is sufficient to ensure that the practice bomblet (14) will withstand the firing acceleration, and that each bomblet unit has a specific gravity of less than 1 kg/dm<sup>3</sup>, (b) the packing pieces (44) bear a separate disc-shaped \*\*\*supporting\*\*\* plate (42) as an axial \*\*\*support\*\*\* which is situated transversally to the axis (11) of the \*\*\*projectile\*\*\* and on which the \*\*\* housings\*\*\* of the practice bomblets (14) are \*\*\*supported\*\*\* in

layers within the carrier \*\*\*projectile\*\*\* (10).

Dwg.1/11

Abstract (Equivalent): US 5076171 A

A bomblet carrier \*\*\*projectile\*\*\* for delivering training bomblets to a target area comprises a \*\*\*projectile\*\*\* body with bomblets \*\*\*supported\*\*\* in layers within it each comprising a paper and plastics \*\*\*housing\*\*\*. \*\*\*Supporting\*\*\* elements are disposed in the body and each element comprises a disc-shaped \*\*\*support\*\*\* plate transverse to the body longitudinal axis. Each \*\*\*support\*\*\* plate has an axial gas passage channel and a side facing a respective one of the bomblet layers. The side includes a circular groove for igniting all the bomblets. A detonator is arranged in a frontal region of the body and a gas passage channel is formed along the body longitudinal axis of the body. An ejector is disposed behind the detonator and includes an ejection charge for emitting ignition gases when ignited by the detonator that are passed to the channel for igniting the bomblets and an ejection plate for causing them to be ejected thereby.

ADVANTAGE - More realistic effect is provided on dropping on soft ground. (7pp

Derwent Class: A95; K03; Q79

International Patent Class (Main): F42B-012/62

International Patent Class (Additional): F42B-008/14; F42B-012/58

53/34/31 (Item 19 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007477547 \*\*Image available\*\*

WPI Acc No: 1988-111481/198816

Ammunition \*\*\*shells\*\*\* container system - has \*\*\*projectile\*\*\*-receiving seat at closed end of tubular \*\*\*housing\*\*\* with reinforcing ribs

Patent Assignee: DART IND INC (REXA )

Inventor: ANTERNI R; LABIANCA V S

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4733773	A	19880329	US 86880434	A	19860630	198816 B

Priority Applications (No Type Date): US 86880434 A 19860630

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4733773	A		14		

Abstract (Basic): US 4733773 A

The container system comprises an elongate tubular \*\*\*housing\*\*\* defining a chamber having an open end and a closed end with a \*\*\*projectile\*\*\*-receiving seat at the closed end. A \*\*\*projectile\*\*\* carrier encircles the \*\*\*base\*\*\* portion of a container-received \*\*\*projectile\*\*\* and extends forwardly through a \*\*\*projectile\*\*\*-surrounding \*\*\*support\*\*\*. The chamber, immediately outward of the \*\*\*projectile\*\*\*, receives a \*\*\*projectile\*\*\* case with the open end of the case inwardly directed and closed by a removable plug which presents a rearwardly opening configuration receiving the \*\*\*ogive\*\*\* of the \*\*\*projectile\*\*\*.

The container system, at the open discharge end of the \*\*\*housing\*\*\*, includes a carrier surrounding the case \*\*\*base\*\*\*. All of the components are closed within the chamber by a screw cap which in turn incorporates one or more viewing windows displaying indicia

designating the nature of the contents of the container. The cap indicia is varied by rotation of an indicia ring accessible only from the interior of the cap prior to a mounting of the cap.

ADVANTAGE - Reinforcing ribs are also integrally moulded longitudinally along the length of the \*\*\*housing\*\*\*.

Derwent Class: Q34

International Patent Class (Additional): B65D-081/00

53/34/32 (Item 20 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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004754533

WPI Acc No: 1986-257874/198639

Uniformly notching hollow point pistol ammunition \*\*\*projectile\*\*\* - by notching flat front of preform before completing mfr

Patent Assignee: OLIN CORP (OLIN )

Inventor: HALVERSON H J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4610061	A	19860909	US 85742386	A	19850610	198639 B

Priority Applications (No Type Date): US 81280769 A 19810706; US 83545596 A 19831026; US 85742386 A 19850610

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4610061	A		5		

Abstract (Basic): US 4610061 A

For uniformly notching an upsetting non-fragmenting \*\*\*jacketed\*\*\* hollow point \*\*\*projectile\*\*\*. a lead core is inserted into a rearwardly opening cup-shaped aluminium \*\*\*jacket\*\*\*, and the assembly is converted into a \*\*\*projectile\*\*\* preform with the cup \*\*\*base\*\*\* facing forwardly and forming a flat circular frontal area orthogonal to the longitudinal axis.

Simultaneously with preforming the flat front is uniformly notched but not split while leaving the \*\*\*ogive\*\*\* un-notched. The nose of the preform is axially recessed to produce a hollow point cavity, then the first front is reduced so that the notches extend from the \*\*\*ogive\*\*\*, pass over an annular nose rim and terminate in the cavity.

ADVANTAGE - The bullet upsets uniformly without fragmentation on target impact. (5pp

Derwent Class: K03; P52; Q79

International Patent Class (Additional): B21K-021/06; F42B-011/10

53/34/33 (Item 21 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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004103995

WPI Acc No: 1984-249536/198440

High explosive \*\*\*projectile\*\*\* fuse - includes adaptor to hold sub-dia. fuse mechanism on conventional \*\*\*projectile\*\*\*

Patent Assignee: US SEC OF NAVY (USNA )

Inventor: CLAYSON A E

Number of Countries: 001 Number of Patents: 001

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4471696	A	19840918	US 82440787	A	19821112	198440 B

Priority Applications (No Type Date): US 82440787 A 19821112

## Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 4471696	A	4		

Abstract (Basic): US 4471696 A

A \*\*\*housing\*\*\* has an external surface configured to a predetermined first \*\*\*ogive\*\*\* corresponding to a \*\*\*projectile\*\*\* having a first dia. An internal bore communicates with an open nose and has a first wall surface configured to a predetermined second \*\*\*ogive\*\*\* corresponding to a \*\*\*projectile\*\*\* having a second dia. smaller than the first. A second wall surface is cylindrical, communicating with the first wall surface remote from the open nose.

The fuse has a \*\*\*base\*\*\*, a nose and an outer surface which is configured to the predetermined second \*\*\*ogive\*\*\*. The fuse is placed in the internal bore such that its outer surface is in contact with the first wall surface of the internal bore, with its nose extending through the open nose of the \*\*\*housing\*\*\*. A \*\*\*base\*\*\* closure attached to the \*\*\*housing\*\*\* and extends into the internal bore, contacting the second wall surface and \*\*\*base\*\*\* of the fuse to secure the fuse in the \*\*\*housing\*\*\*.

1/1

Derwent Class: Q79

International Patent Class (Additional): F42C-019/00

53/34/34 (Item 22 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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003699047

WPI Acc No: 1983-59030K/198325

\*\*\*Shell\*\*\* for use with flat trajectory weapon - is designed for high trajectory flight but has external dimensions of flat trajectory  
 \*\*\*shell\*\*\*

Patent Assignee: RHEINMETALL GMBH (RHEM )

Inventor: BECKER W; BISPING B; ROMER R

Number of Countries: 011 Number of Patents: 008

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3148829	A	19830616				198325 B
EP 81644	A	19830622	EP 82109259	A	19821007	198326
AU 8290691	A	19830616				198331
ES 8309002	A	19831216				198409
CA 1216465	A	19870113				198707
EP 81644	B	19870722				198729
DE 3276836	G	19870827				198735
US 4955938	A	19900911	US 88279236	A	19881129	199039

Priority Applications (No Type Date): DE 3148829 A 19811210; DE 3246173 A 19821214

Cited Patents: 1.Jnl.Ref; DE 1578075; DE 196232; DE 306404; FR 1064253; FR 401144; No-SR.Pub; US 3311057; US 3396658

## Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes

DE 3148829 A 10  
 EP 81644 A G  
 Designated States (Regional): BE DE FR GB IT NL SE  
 EP 81644 B G  
 Designated States (Regional): BE DE FR GB IT NL SE

Abstract (Basic): DE 3148829 A

Munition \*\*\*shell\*\*\*, esp. for use against concealed targets, is designed to be fired at a high trajectory but to be used in the barrel of a low trajectory weapon without modification to the barrel. The \*\*\*shell\*\*\* (cartridge and \*\*\*projectile\*\*\* is a single unit, esp. designed for automatic weapons. This unit has the same external dimensions as the low-trajectory \*\*\*shell\*\*\* designed for the same weapon. The volume occupied by the firing charge is, however, smaller than that of the conventional \*\*\*shell\*\*\* and the additional volume is occupied by the greater length of the \*\*\*projectile\*\*\*.

The \*\*\*projectile\*\*\* may be designed as an explosive charge, esp. comprising a hollow charge, or as a smoke-producing or fog-producing \*\*\*projectile\*\*\*.

The \*\*\*projectile\*\*\* can be fired from a conventional automatic weapon, and therefore does not rely upon the skill of the loader for speed of firing. No modifications to the weapon itself are required.

Abstract (Equivalent): EP 81644 B

Cartridged ammunition constructed for flat trajectory firing and constructed for steep trajectory firing, characterised by the fact that the ammunition can be used in an automatic ba-rel weapon and that the overall length and external diameter of the ammunition for flat firing is coordinated with the ammunition for steep firing by providing, for the flat firing ammunicci ammunition, (a) a longer propulsive charge \*\*\*casing\*\*\*, (b) a greater volume for the propulsive charge, (c) a greater distance from the \*\*\*projectile\*\*\* \*\*\*base\*\*\* to the \*\*\*base\*\*\* of the propulsive charge \*\*\*casing\*\*\* and (d) a shorter \*\*\*projectile\*\*\*, than in the steep firing version, and by providing in the steep firing version (e) a shorter propulsive charge \*\*\*casing\*\*\*, (f) a smaller volume for the propulsive charge, (g) a shorter distance from the \*\*\*projectile\*\*\* \*\*\*base\*\*\* to the \*\*\*base\*\*\* of the propulsive charge \*\*\*casing\*\*\*, and (h) a longer \*\*\*projectile\*\*\* than in the flat firing version, the larger internal space of the \*\*\*projectile\*\*\* in the steep firing version containing in the shorter propulsive charge \*\*\*casing\*\*\* an additional payload in each construction, that part of the \*\*\*projectile\*\*\* which extends from the \*\*\*casing\*\*\* is of approximately the same external diameter as the propulsive charge \*\*\*casings\*\*\* having the same diameter and said \*\*\*projectile\*\*\* diameter extends without change as far as a short \*\*\*ogivel\*\*\* surface at the nose of the \*\*\*projectile\*\*\*. (7pp)a

Abstract (Equivalent): US 4955938 A

Ammunition unit used in an automatic tubular weapon wherein: 1) the ammunition unit is a one-piece unit having a propellant charge incl. a cylindrical member with bottom face at one ene, 2) the ammunition unit has a given length, O.D. and external shape and with the \*\*\*projectile\*\*\* of the ammunition unit having a main cylindrical portion of a constant dia. and a short ogival front end portion, 3) the propellant charge extends between the bottom face and bottom member, 4) the \*\*\*projectile\*\*\* of the ammunition unit is shorter for flat trajectory fire than for high-angle trajectory fire and 5) the \*\*\*projectile\*\*\* of the ammunition unit has a smaller amt. of payload for flat trajectory fire than for high-angle trajectory fire.

USE/ADVANTAGE - Ammunition can be used for high-angle fire, fired from a weapon pref. for flat trajectory ammunition. Ammunition requires

no additional devices for being fired

Derwent Class: K03; Q79

International Patent Class (Additional): F42B-005/00; F42B-009/02;  
F42B-010/06; F42B-012/10; F42B-013/00

53/34/35 (Item 23 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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001494064

WPI Acc No: 1976-F6982X/197625

Spin stabilised \*\*\*projectile\*\*\* fuse - has firing train coupling  
inertial, delay and combustible fuse loop to booster charge

Patent Assignee: US SEC OF ARMY (USSA )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 3961578	A	19760608				197625 B

Priority Applications (No Type Date): US 74447452 A 19740301

Abstract (Basic): US 3961578 A

The fuze for a spin-stabilized artillery \*\*\*projectile\*\*\* comprises a body including an \*\*\*ogive\*\*\* member containing point-detonating firing means, selectable for super-quick or delay firing; and a \*\*\*base\*\*\* member containing an inertial delay fuze operable by either direct or graze impact, a combustible fuse loop surrounding the inertial delay fuze and exposed to the point-detonating firing means. A firing train couples the inertial delay fuze and the fuse loop to a booster charge for initiating the main explosive charge of the \*\*\*projectile\*\*\*. The inertial delay fuze may have a cylindrical \*\*\*housing\*\*\* including a rearward tubular extension forming an annular chamber, a rearwardly-biased firing pin being slidable in the tubular extension.

Derwent Class: Q79

International Patent Class (Additional): F42C-001/04

53/34/36 (Item 24 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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001445503

WPI Acc No: 1976-A8390X/197604

Pyramid \*\*\*projectile\*\*\* payload ejection device - comprises cup-like member which gives additional storage space within cup

Patent Assignee: US SEC OF ARMY (USSA )

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 412068	A	19760113				197604 B
US 3981244	A	19760921				197640

Priority Applications (No Type Date): US 73412068 A 19731102; US 72229847 A 19720228

Abstract (Basic): US 412068 A

The internal \*\*\*ogive\*\*\* portion (18) of the \*\*\*projectile\*\*\*



intermediate the rear primary payload and the expulsion charge cup is provided with a cup like ejection member (30) whose closed end faces the expulsion charge and peripheral wall conforms to the internal wall of the \*\*\*housing\*\*\* of the \*\*\*projectile\*\*\* with the forward open portion having an outward directed flange for sliding abutment with the inner \*\*\*projectile\*\*\* wall forward of the \*\*\*ogive\*\*\*. The \*\*\*base\*\*\* of the \*\*\*projectile\*\*\* \*\*\*housing\*\*\* carries an internally extending stop member for terminating the rearward motion of the pusher assembly. By filling the ejection member with an additional payload the previously empty \*\*\*ogive\*\*\* portion is more fully utilized.

Derwent Class: Q79

International Patent Class (Additional): F42B-013/50

53/34/37 (Item 25 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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000707548

WPI Acc No: 1970-44774R/197025

Practice cartridge

Patent Assignee: DYNAMIT NOBEL AG (DYNM )

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
FR 1585264	A					197025 B
GB 1240881	A					197129

Priority Applications (No Type Date): DE D54039 A 19670906

Abstract (Basic): FR 1585264 A

Rear-stabilised \*\*\*projectile\*\*\* for firing from reduction tube in recoilless weapon has central bore from rear end communicating by radial channels with propulsive charge disposed around tail behind its \*\*\*ogive\*\*\*. \*\*\*Base\*\*\* of \*\*\*casing\*\*\* is prolonged backward with bore(s) extending that of \*\*\*projectile\*\*\* and connected to \*\*\*casing\*\*\* interior and pref. also bore(s) detached from first. One of the bores is formed as fuse-holder, pref. the central one, and its bypass is externally blocked up.

Derwent Class: K03; Q79

International Patent Class (Additional): F42B-000/00

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